巴基斯坦卡洛特电力有限公司
KAROT POWER COMPANY (Pvt.) LIMITED

REF NO. TGSAILKPCL2015120 April 2, 2015

Mr. Safeer Hussain Shah
Registrar
National Electric Power Regulatory Authority
NEPRA Tower Attaturk Avenue (East),
Sector G-5/1, Islamabad.

Subject: Submission of the EPC Stage Tariff Petition of 720 MW Karot Hydro Power Project

Dear Sir,

Kindly accept the Company's Tariff Petition, along with the fee as determined by the National Electric Power Regulatory Authority ("NEPRA" or the Authority-) for kind consideration and favorable approval by the Authority in accordance, inter alia, with section-31 of the Regulation of Generation. Transmission and Distribution of Electric Poser Act, 1997 read with Rule 3 of the NEPRA tariff Standards and Procedure Rules, 1998 and other applicable provisions of NEPRA law.

The Tariff Petition (including its Annexures) is submitted in triplicate together with: ✓

a. The Bank Draft No. 00000683 dated 24th March, 2015, amounting to PKR 1,354,720.00 (Pakistan Rupees One Million Three Hundred and Fifty Four Thousand Seven Hundred and Twenty Only as requisite for fee for Tariff Petition as communicated by NEPRA.
b. Board Resolution of Karot Power Company (Private) Limited
c. Affidavit of Mr. Sheng Zhendong

Best regards,

Yours sincerely,

Mr. Sheng Zhendong
Chief Executive Officer,
Karot Power Company (Private) Limited

For information &
— D/Reg-I/SAR
— SA(Tech)
— SAT-I
— M/F
02.04.15
cc: Chairman
VC/M(Lic)
M(T)
M(CA)
M(M&E)

Dy No. 354
Dated 02-04-2015

CC:
1. Mr. Shah Jahan Mirza, Managing Director, PPIB.
2. Mr. Munawar, Director Hydrel, PPIB.

Before The National Electric Power Regulatory Authority

Tariff Petition for EPC Stage Reference Tariff

for

KAROT POWER COMPANY (PVT.) LTD

720 MW Karot Hydropower Project

April 02, 2015

Karot Power Company (Private) Limited
House No. 05, Street F-8/3,
Islamabad

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Section 1. Petitioner's Information

1.1 Name of Petitioner

Karot Power Company (Private) Limited ("KPCL", the "Project Company" or the "Petitioner")
House No. 05, Street 72
F-8/3, Islamabad
Email: info.karotpower@gmail.com
Company Registration No: 0072904

1.2 Project Sponsors

China Three Gorges South Asia Investment Limited	Main Sponsor
Associated Technologies Limited	Sponsor
Mr. Ishaq Ahmed Malik	Sponsor

1.3 Representative of the Petitioner

Mr. Sheng ZhengDong	CEO - KPCL
Ms. Liang Ye	KPCL
Ms. Yan Li	KPCL
Mr. Kang Shengzu	KPCL

1.4 Project Advisors

Bridge Pacific	Financial Advisors
CTG in-house Technical Team	Technical Advisors
AQ LAA Advocates	Project Counsel

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Section 2. Grounds for the Petition

2.1 Basis for Petition

This Petition is made to the National Electric Power Regulatory Authority ("NEPRA") under the Regulation of Generation, Transmission and Distribution of Electric Power Act (XL of) 1997 (the "NEPRA Act") and the Tariff Standards and Procedure Rules, 1998 (the "NEPRA Rules") made under the NEPRA Act; and other applicable laws.

NEPRA is responsible under the NEPRA Act to determine tariffs, rates and other terms and conditions for the supply of electric power services by the generation, transmission and distribution companies and to recommend them to the Federal Government for notification. NEPRA is also responsible for determining the process and procedures for reviewing and approving tariffs and tariff adjustments.

2.2 Tariff Determination Stages

In order to cater to the unique nature of hydropower plants, wherein cost uncertainty due to a long gestation period is neither in the control of the Petitioner nor the power purchaser, NEPRA has developed a Mechanism for Determination of Tariff for Hydropower Projects (the "Hydropower Tariff Mechanism"). The Hydropower Tariff Mechanism provides for determination of tariff and subsequent adjustments at different stages of development of hydropower projects. In this respect three distinct stages have been identified in the Hydropower Tariff Mechanism:

i) Feasibility stage;

ii) EPC stage; and

iii) COD stage (after achievement of Commercial Operation Date ("COD")).

This application for determination of tariff (the "Petition") is intended to provide a basis for NEPRA to render a tariff determination, which is applicable to the EPC stage. Subsequent tariff determinations will be made in accordance with the Hydropower Tariff Mechanism at a future date.

2.3 About the Petitioner

Karot Power Company (Private) Limited ("KPCL") is a private limited company registered under the Companies Ordinance, 1984. KPCL is in the process of developing a 720 MW hydropower project to be located near the Karot Bridge at Tehsil Kahuta, District Rawalpindi, Punjab (the "Project"). The Project is to be developed under the guidelines of Policy for Power Generation Projects 2002 (the "Policy") issued by the Government of Pakistan.

The feasibility study of the Project was conducted by a consortium of engineering consultants headed by SMEC and was approved by the Panel of Experts organized by PPIB in the year 2009. KPCL was granted a generation license by NEPRA on 26 November 2013 for its 732 MW (gross) hydro-based generation facility to be located at Karot village, District Rawalpindi, in the province of Punjab. Thereafter KPCL filed a tariff petition to NEPRA on the basis of the approved feasibility study as per the Policy, as a result the Tier-1 ("Feasibility Stage Tariff") was determined

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by NEPRA on 29th May 2012. A Motion for Leave for Review was filed by the Project on June 7, 2012 ("MLR") to request NEPRA to reconsider some of the items disallowed under the Feasibility Stage Tariff determination. Additional supporting information was submitted to NEPRA as part of the MLR application filed by the Project. NEPRA issued its determination on the MLR application filed by the Project on 11th December 2012.

During the MLR application process, KPCL applied for issuance of the Letter of Support ("LOS"); the same was issued by Private Power & Infrastructure Board ("PPIB") on 29th Aug. 2013. In accordance with the requirements of the NEPRA Act, NEPRA Rules and the Hydropower Tariff Mechanism, KPCL hereby submits this Petition for determination/approval of the EPC Stage Reference Tariff along with the one-time adjustments, pass-through items and indexation mechanisms and other terms and conditions for supply of electric power service to CPPA/NTDC (the "Power Purchaser") from the Project.

All requisite information required by NEPRA for processing the Petition has been annexed herewith; KPCL will be pleased to submit any further information as and when required by NEPRA in connection with the determination.

2.4 Request for Tariff Determination

Pursuant to the relevant provisions of the NEPRA Act, NEPRA Rules, the Policy and the Hydropower Tariff Mechanism, KPCL submits herewith before NEPRA, this Petition for approval of (i) the reference EPC stage tariff; (ii) the energy production estimate; (iii) the Indexations, Adjustments and Escalations; (iv) Cost Reopeners; and (vi) other matters set out in this Tariff Petition, in each case, for the Project Company's power generation Project to be located at Karot, District Rawalpindi, Punjab.

NEPRA (the Authority) is kindly requested to process the Petition at the earliest, thereby enabling the Project Company to proceed further with the development process.

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Section 3. Executive Summary

Project Company	Karot Power Company (Private) Limited		
Gross Capacity	Mechanical Rating	732 MW	
	Electrical Rating	720 MW	
Auxiliary Consumption	7.2 MW		
Net Capacity	712.8 MW		
Project Location	Karot, District Rawalpindi, Province of Punjab, Pakistan		
Concession Period	30 Years		
Power Purchaser	National Transmission and Despatch Company Limited (through Central Power Purchasing Agency)		
Turbines	Four Francis turbines (vertical) of 183 MW each		
Annual Energy Production	3,206 GWh (Gross)		
	3,174 GWh (Net)		
Capacity Factor	50.83%		
Construction Period	5 Years		
Concession Period	30 Years		
Project Basis	BOOT		
Project Cost	**Description**		**US $ Million**
	EPC Cost		1,277.8
	Engineering and Supervision cost		127.8
	Land Acquisition & Resettlement		12.5
	Project Development Cost		127.8
	Legal Fee & Charges		12.8
	O&M Mobilization Cost		12.8
	Duties and Taxes		23.6
	Insurance during Construction		35.4
	Financial Fee and Charges		55.6
	Sinosure Fee		54.3
	Interest during Construction		243.7
	Total Project Cost		1,984.0
Project Financing	**Description**	**Percentage**	**US $ Million**
	Equity	20%	396.8
	Debt	80%	1,587.2
	Total Financing	100%	1,984.0
Equity	**Description**	**Percentage**	**US $ Million**
	China Three Gorges South Asia Investment Limited	93%	369.0
	Associated Technologies Limited	5%	19.86
	Malik Mubashir	2%	7.94
	Total Equity	100%	396.8
	It is pertinent to highlight that the International Finance Corporation (IFC), a member of World Bank Group, has acquired shares in China Three Gorges South Asia Investment Limited. Therefore, the Project has adopted international competitive bidding (ICB) processes in line with the requirements of IFC for selection and appointment of the EPC contractors.		

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Financing Terms	**Description**	**Terms**		
	Loan Term	12 Year + 5 year grace period		
	Debt Repayment	Semi-Annual Installments		
	Mark-up rate	(6 month LIBOR + 4.75%)/(1-10%) (10% withholding tax)		
Operational Phase Cost	**Description**		**Year 1-12**	**Year 11-30**
			Million US $	
	Operations Cost	O & M	34.6	34.6
		Water Use Charges	4.7	4.7
		Insurance Cost	17.3	17.3
	Financial Charges (Average)	Interest	51.9	-
		Sinosure on Debt	7.5	-
		Sinosure on Equity	3.0	1.4
	Total		119.0	58.0
Tariff	US¢ 10.2479 per kWh / PKR 10.4119 per kWh			
Exchange Rate	1 US$ = PKR 101.6			
Financial Advisors	Bridge Factor			
Project Counsel	Aqlaal Advocates			
Summary of EPC Selection Process	KPCL invited tenders for EPC of the Karot Hydro Power Project on 1st October 2014. Last date for submission of bids was 15th of December 2014. Following parties submitted their bids by the due date: 1. Yangtze Three Gorges Technology & Economy Development Co., Ltd. – China Machinery Engineering Corporation Consortium; 2. China Gezhouba Group Company Limited; 3. Power Construction Corporation of China –-Dongfang Electric Corporation Consortium. KPCL adopted International Competitive Bidding (ICB) for selection of EPC Contractors and for this purpose undertook a Comprehensive Tender Evaluation. EPC Tender evaluation was conducted by KPCL from December 16th 2014, and completed on 09th of January 2015. For this purpose, SMEC International, Australia, was engaged by KPCL to carry out an Independent Tender Evaluation. Tenders were initially evaluated for shortlisting on the basis responsiveness, completeness, experience, capability, and financial soundness in accordance with Statement of Qualification (SOQ) provided in the Bidding documents. All the tenders met the shortlisting requirements. Afterwards a detailed Technical evaluation of the bids was conducted, resulting in technical qualification of all three tenderers. Financial evaluation was followed by technical evaluation. Based on combined technical and financial scores as well as recommendation of SMEC's independent evaluation report, Consortium of Yangtze Three Gorges Technology & Economy Development Co., Ltd. (TGDC) and China Machinery Engineering Corporation (CMEC) declared as the first preferable tender who entered contract negotiation. Finally, KPCL awarded EPCs contract to TGDC – CMEC Consortium.			

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Section 4. The Sponsors and the Project

4.1 About the Project

The 720 MW (gross) Karot Hydropower Project is located on Jhelum River just upstream of the Karot Bridge of Punjab Province. The development of the Project is being undertaken on a build-own-operate-transfer basis by the Karot Power Company (Private) Limited owned 93% by China Three Gorges South Asia Investment Limited – a subsidiary of China Three Gorges Corporation. The project is being implemented under China-Pakistan Economic Corridor (CPEC) as a prioritized project.

The Project will be the fourth in the cascade of five hydropower ("HPP") stations planned on Jhelum River, downstream of the Azad Pattan HPP and upstream of the Mangla HPP. The dam is situated near Karot Bridge in Punjab Province, about 74 km away from Mangla Dam and 55km away from Islamabad. Access to the site is by the Islamabad-Kahuta-Kotli road.

Since the project is located on the Jhelum River which is an early rising stream. Its river flow normally starts increasing in early March (much earlier than the other rivers in Pakistan) and reaches its peak till May, and continues in high flows towards the end of August. This river flow pattern will result in availability of electricity during the critical periods of low availability of hydropower, and will result in mitigation of chronic power shortage problem in winter from March to May, when power output of Tarbela Hydropower Plant falls substantially.

Pakistan has been facing severe power shortage for the last few years and hydropower is the best solution. Hydro is the cheapest form for energy with little environmental impacts. Pakistan has been endowed with immense potential hydropower resources by nature, which should have been exploited to provide affordable energy to its people. In addition to this, a substantial amount of hydel potential is also available outside the main river valleys, in the northern mountainous region including Azad Jammu and Kashmir (AJK). The total hydroelectric potential in the country is estimated to be 60,202 MW: among which 24,736 MW lies in the Khyber Pakhtunkhwa Province ,21,725 MW in Gilgit Baltistan area ,6,450 MW in Azad Jammu &Kashmir and 7,291 MW in Punjab Province. About 89% of above-mentioned hydropower potential is still untapped and yet to be harnessed. It is the need of the hour to tap these resources in order to cope with severe power shortage in the country.

KPCL took an initiative in this respect and in May 2007, obtained Letter of Interest ("LOI") Private Power Infrastructure Board (PPIB) for development of the Karot Hydro Power Project from. In October 2009, PPIB approved the Feasibility Study Report of the Project. The feasibility study of the Project identified design comprising a concrete gravity dam water release structures, 4 headrace tunnels, underground powerhouse and corresponding waterway systems; cofferdams and diversion tunnels, etc.

However according to the EPC Tender Evaluation result, the selected EPC Contractor proposed to optimize the main design comprising laying of asphalt concrete core rock-fill dam at the bend head of river bend with surface powerhouse.

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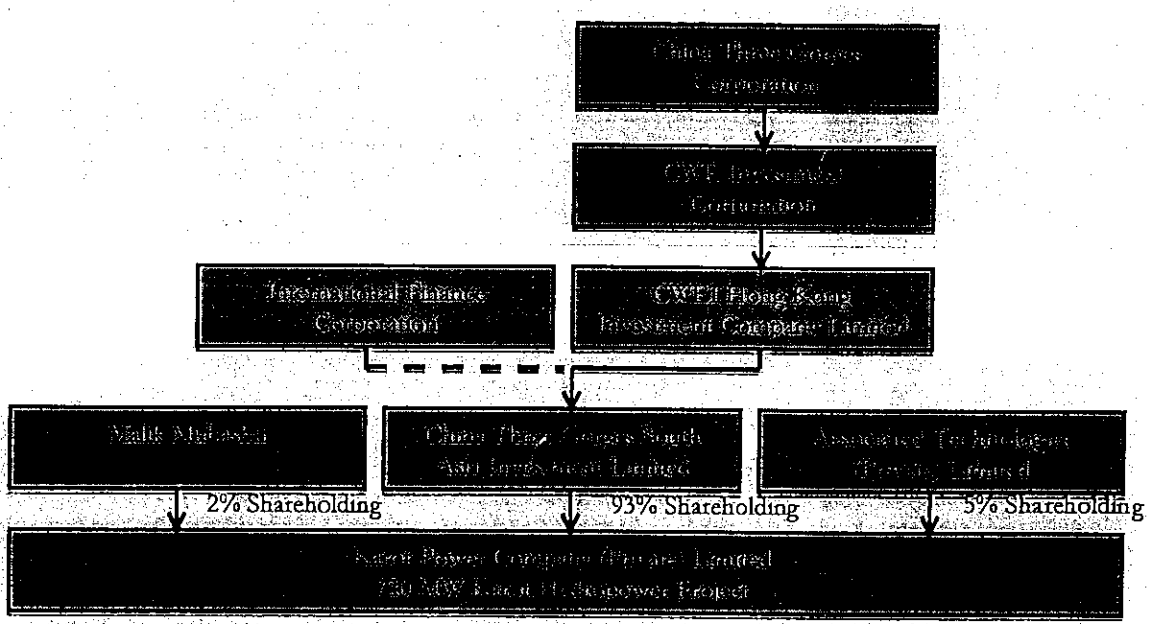
4.2 About the Sponsors

4.2.1 China Three Gorges South Asia Investment Limited (TGSAIL)

TGSAIL is incorporated for the purpose of acquiring, investing, developing, building, owning and operating renewable power generation projects in Pakistan and other territories. TGSAIL's current multi-stage project pipeline is US$5.5 billion (approx.), comprising of solar, wind and hydropower projects with a cumulative capacity of over 2,590 MW, including three hydropower projects with total installed capacity of 2,410 MW. TGSAIL aims to become the largest renewable power company in Pakistan. This Project marks the entry of a large and experienced sponsor with a significant investment program in Pakistan's electricity market that needs an investment of around US$15-20 billion to develop 10,000 MW of additional generation capacity in the next 5 years to overcome the supply shortfall in Pakistan.

TGSAIL is a subsidiary of CWE Investment Corporation ("CWEI") through CWEI Hongkong Investment Company Limited. TGSAIL has acquired a 93% stake in the company. Ownership structure of TGSAIL leading up to ultimate parent company i.e. China Three Gorges Corporation can be best explained through the hierarchical diagram below:



4.2.2 Brief on Parent Companies of TGSAIL

4.2.2.1 China Three Gorges Corporation (CTG)

CTG is a wholly state-owned enterprise with a registered capital of RMB 149.54 Billon. CTG is strategically positioned to become a clean energy conglomerate specializing in development and operation of large-scaled hydropower projects. CTG's principal operations include engineering, construction, management, electricity production and provision of related technical services for hydropower projects. With experience in the construction, management and operation of the Three Gorges Project – 22,500 MW (world's largest hydropower project), CTG has developed "four core abilities", i.e. ability to construct and manage large-scale hydropower projects, ability to raise and manage funds for large-scale hydropower projects, ability to operate and market large-scale hydropower projects and ability to manage unified dispatching of cascade hydropower projects. Map below shows the key hydropower projects being undertaken by CTG in China.

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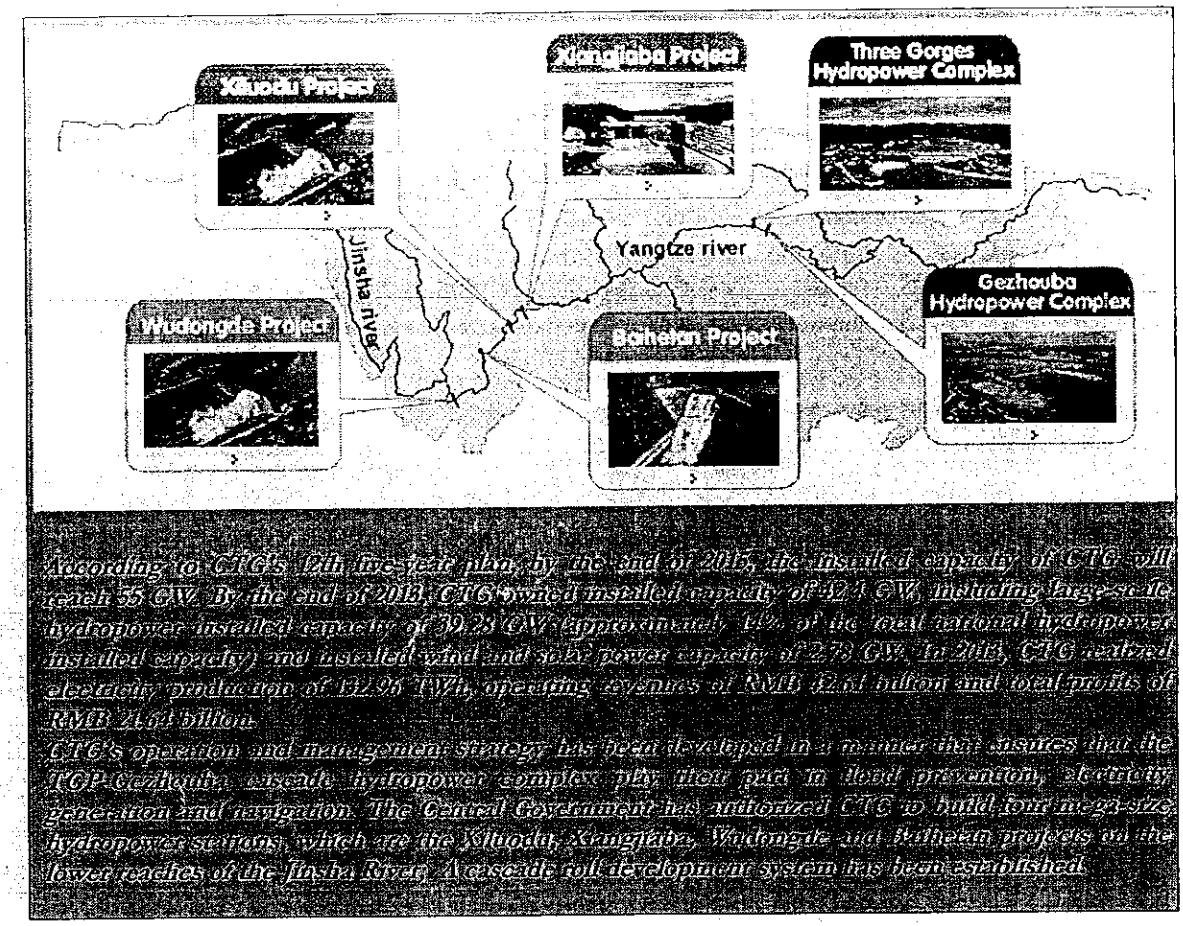

According to CTG's 12th five-year plan, by the end of 2015, the installed capacity of CTG will reach 55 GW. By the end of 2013, CTG owned installed capacity of 42.4 GW, including large-scale hydropower installed capacity of 39.28 GW (approximately 11% of the total national hydropower installed capacity) and installed wind and solar power capacity of 2.78 GW. In 2013, CTG realized electricity production of 132.96 TWh, operating revenues of RMB 82.61 billion and total profits of RMB 24.61 billion.

CTG's operation and management strategy has been developed in a manner that ensures that the TGP, Gezhouba cascade hydropower complex play their part in flood prevention, electricity generation and navigation. The Central Government has authorized CTG to build four mega-size hydropower stations, which are the Xiluodu, Xiangjiaba, Wudongde and Baihetan projects on the lower reaches of the Jinsha River. A cascade roll development system has been established.

CTG has actively implemented the strategy of "going globe" to explore the international market by fully utilizing the reputation of TGP and its hydropower development and operating technologies and experiences.

4.2.2.2 CWE Investment Corporation (CWEI)

Founded in August 2011, CWEI is a wholly owned subsidiary of CTG and serves as the dedicated overseas investment platform, responsible for investment, construction, operation and management of the international businesses of CTG. Leveraging on the financial strength and technical capabilities of CTG, CWEI is pursuing the development of hydro, wind and solar generation projects across South Asia, Southeast Asia, Europe, America and Africa. CWEI is also the largest shareholder in Energias de Portugal ("EDP"), which is an integrated utility company that generates, distributes, and supplies electricity in Portugal and through EDP Renovaives – one of the largest wind power producers in the world.

4.2.2.3 CWEI Hongkong Investment Company Limited

CWEI Hongkong Investment Company Limited (CWEI HK) was incorporated on 02 Nov 1984 for setting up power projects. CWEI HK is the immediate holding company of TGSAIL.

4.2.3 Arrangement with International Finance Corporation

The International Financial Corporation (IFC), a member of World Bank Group, has signed a subscription agreement with CWEI, CWEI HK and TGSAIL for subscription up to 15% equity of TGSAIL. The first subscription is expected in the first half of year 2015 after the condition precedents being fulfilled. IFC will also participate in debt financing at the Project Company level. Given the mandate awarded to TGSAIL, IFC is keenly interested in TGSAIL's investment interest in Pakistan. IFC's proposed investment in the Project will:

- Support the significant investment program of a large and experienced sponsor group in

Pakistan's electricity market that is in considerable need of private sector investment.

- Seek to leverage IFC's knowledge and experience in the power sector in Pakistan to support the investment plans of the TGSAIL.
- Allow TGSAIL to develop a robust environmental and social management system, ensuring the implementation of IFC's Performance Standards, particularly for development of large hydropower projects.
- Add value in terms of adoption of international corporate governance standards, which will help TGSAIL to list and raise capital from international capital markets.
- Serve as a foundation for a long-term partnership, which provide confidence to other international investors and lenders for future debt mobilization in a challenging market, where long-term, limited or non-recourse debt is not readily available.
- Promote South-South investments.

4.2.4 Associated Technologies Limited

Associated Technologies (Private) Limited (ATL) was incorporated in October 1987 under the Companies Ordinance 1984. The core area of expertise of ATL lies in civil construction and development of infrastructure projects.

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Section 5. EPC – Process & Selection

5.1 EPC Tendering

For the purposes of filing the EPC Stage Tariff petition in line with the Hydropower Tariff Mechanism, the Project Company has invited, through newspaper, capable firm/enties to participate in the International Competitive Bidding (ICB) for selecting EPC Contractor(s) for execution and completion of the Project on turnkey basis. After the competitive and comprehensive tender evaluation, a tender jointly submitted by Yangtze Three Gorges Technology & Economy Development Co., Ltd. and China Machinery Engineering Corporation ranked as the 1st perferred tender. Thereafter, KPCL according to the practice in Pakistan executed the Engineering and Construction Contract and Equipment Supply Contract respectivily with aforesaid companies. Brief details of the process adopted by the Project Company is set out below:

5.1.1 EPC Tendering Timelines

In order to induce potential contractors to participate in the EPC bidding process, the Project Company conducted a comprehensive EPC tendering process in line with international best practices for competitive bidding. The timelines followed by the Project Company are provided below:

Circulation of RFP for hiring of bidding consultant	April 2014
Hiring of international consultants having expertise in ICB	July 2014
Commencement of work on tender documents	July 2014
Publication for invitation to bid in newspapers	Oct. 01, 2014
Deadline for aquiring of bidding documents	Oct. 31, 2014
Site visit with potential tenderers	Oct. 27, 2014
Pre-bid meeting with potential tenderers	Oct. 29, 2014
Clarifications and issuance of addendums to potential tenderers	Nov 04 to Dec 07, 2014
Submission of tenders along with tender security of USD 5 million	Dec. 15, 2014
Evaluation of tenderers	Dec 16 to Jan 09, 2015
Clarification on tenders submitted to ensure apple-to-apple comparison amongst tenderers	Dec 16 to Dec 20, 2014
Identification of 1st preferred tenderer	Jan. 09, 2015
Contract negotiation with 1st preferred tenderer for finalisation of EPC contracts	Jan 09 to Feb 06, 2015
Execution of preliminary EPC arrangement	Feb, 2015

5.1.2 Scope of Work under the EPC Contract

The scope of work set out under the bidding documents requires the EPC contractor to provide a end-to-end solution for development of the Project. Broadly, the scope includes, but is not limited to, the following:

a. Construction of a dam;
b. Water release structures for flood discharge and sand flushing;
c. A fully-equipped hydropower house;
d. Corresponding waterway systems and auxiliary systems for hydropower station;
e. Cofferdams and diversion tunnels;

f. A switchyard adjacent to the powerhouse;
g. Internal service roads between the dam, the powerhouse, the intake for the power conduits and other features constructed as a part of this Project; and
h. Other Works as necessary.

5.1.3 EPC Evaluation Process

KPCL hired services of SMEC to conduct the bidding process for selection of EPC Contractor(s) and to provide an independent EPC Contractor Selection Report.

The evaluation process involved two stages. The first stage was to evaluate responsiveness (Envelope 1) of each tender. Tenders found to be responsive were progressed to the second stage, i.e. comprehensive evaluation of the Technical Proposal and Financial Proposal (Envelope 2). During the second stage, Technical Proposal of each tender was evaluated. If a tenderer's Technical Proposal obtains a minimum score of 80 points (out of 100), only then its Financial Proposal would be evaluated .

The scores of the Technical and Financial proposals were then consolidated by applying a 70% weighting to the Technical Proposal and a 30% weighting to the Financial Proposal. Tenders were ranked according to their consolidated score.

5.1.4 Bidding Requirements

To avoid any ambiguities from arising at a later stage and in order to ensure that the bids submitted by potential bidders are in compliance with the requirements of the Project, the evaluation criteria – included as part of the bidding documents – was developed in line with the Quality and Cost Based System (QCBS) generally employed by projects of such stature and acceptable to international financial institutions.

To ensure that only serious tenderers participate in the bidding process, one of the key criteria for acceptance of the bids was submission of a tender security of USD 5 million in the form of an irrevocable bank guarantee. Each of the bidders submitting their response on the tender documents complied with this requirement to evidence their keenness to take on the role of the EPC contractor(s) for execution and completion of the Project.

In order to select the most optimized and cost-effective technical scheme to construct and implement the project, the Project Company has allowed in the tendering documents that each tenderer could put forward its own project layout and main building design based on the project topography, geology, hydrology, and other basic information combined with site visits, instead of strictly limiting the tenderers to adopt that proposed in the feasibility study.

5.1.5 Determination of Responsiveness of Bid

First and foremost the tenders submitted by the tenderers were evaluated to determine the responsiveness of each tender in regards to the requirements laid out under the bidding documents. For this purpose a basic responsiveness matrix was developed, the same is provided below for reference:

Sr.	Evaluation Criteria	Category	Description	Decision
1	Completeness	Statement of Qualification (SOQ)	Does the bid satisfy the requirements laid out in the SOQ	Responsive / Non Responsive
2	Experience	General Experience	Information regarding general experience attached / not attached	Responsive / Non Responsive
		Particular Experience	Specific experience related info attached / not attached	Responsive / Non Responsive
3	Competence	Design capacity	Documents reflecting competence of contractor provided / not provided	Responsive / Non Responsive
		Manufacturers of Equipment	Documents reflecting competence of equipment manufacturer's attached / not attached	Responsive / Non Responsive
4	Financial	Financial soundness	Documents in support of financial soundness of contractor attached / not attached	Responsive / Non Responsive

A brief on the requirements set out under the SOQ and basic evaluation criteria for determining responsiveness of bid is provided below:

- Organization structure – Tenderer had to be a firm, partnership or company duly organized, existing and registered under the laws of Pakistan or any country, except a country not having business relations with Pakistan.

- Construction Experience – Tenderer was required to have experience and ability in the works covered by the scope of the bidding document as stipulated above; the minimum criteria was requirement for the contractor or lead parter of the consortium :
  a. to have successfully completed one EPC /Turnkey hydropower contract with a minimum value of US $ 600 M during the last ten (10) years
  b. to have constructed at least one hydropower plant of 700 MW (or more) in the last 10 years, and
  c. to have constructed a concrete gravity dam or a rockfill dam with a height of at least 100m in the last 10 years,
  d. to have experience in construction of one hydraulic tunnel in the last 10 years in Asia, (at least 10m diameter with the length of 500m),
  e. to have experience in construction of one powerhouse complex with a net span of at least 20m in the last 10 years,
  f. to have experience in erection, installation, testing and commissioning of one powerhouse with Francis turbines with unit capacity greater than 200 MW in the last 10 years.
- Design Experience – Specific requirements regarding design capabilities of the EPC contractors were specified as follows:
  a. Designed at least one (1) project with a minimum value of US $ 600 M during the last 10 years in Asia,
  b. Designed at least one hydropower plant, completed or on- going, having an installed capacity of at least 700 MW in the last 10 years in Asia,
  c. Designed a Concrete Gravity Dam or a Rockfill Dam with a height of at least 100 m in the last 10 years in Asia,
  d. Designed one hydraulic tunnel in the last 10 years in Asia, (at least 10m diameter with the length of 500m),
  e. Designed a spillway with a flood discharge of at least 18,000 m^3/s,
  f. Designed at least a powerhouse complex of Francis turbines with single unit capacity greater than 200 MW in the last 10 years in Asia,
  g. Designed at least a powerhouse complex of the net span of at least 20m in the last 10 years in Asia.

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- Experience of contractor performing works under the Offshore Contract
  a. the turbine generator manufacturer should have at least ten (10) years experience in manufacture of vertical Francis turbines of not less than 200 MW units each at head of over 60 meters,
  b. for transformer suppliers at least ten years experience in manufacture of transformers of over 200 MVA each with the high voltage side of 500kV,
  c. for GIS suppliers at least ten years experience in manufacture of Gas Insulated Switchgear (GIS) with the voltage level of 500kV.

- Personnel – the EPC Contractors were required to submit details of personnel they propose to assign on the Project at management roles and for on-site supervisory roles. This was done to ensure that the personnel proposed to be appointmed are competent and have relevant experience for similar works.

- Financial – Banking references of contractors were required to ensure that the entities proposed to be engaged have good financial standing and ability to take on a project of such magnitude.

Only those tenders found to be responsive in first stage progressed to the second stage.

5.1.6 Marking Criteria for Technical Proposal

The marking criteria specified in the tender documents and thereof adopted for evaluation of the technical proposals is set out below:

Criteria	Points
Basic Design Report i. Preliminary Draft Basic Design Report (diversion, sediment, seismicity and hydrology analysis) ii. Suitability of investigation, design and test plan described in bidding documents for each stage (level 0, level 1 and level 2 including drawing submission plan, site test, model test and relevant hydrology analysis) iii. Applicable experience of key staff to be assigned to the Project iv. Demonstration of their necessary design capability to execute the Contract	50
General Plan and Implementation Methodology Statement for the Works i. Suitability of project arrangement, ii. Preliminary Site Organization for adhering to the requested resources, methods, workmanships and Time for Completion to the works, such as diversion, river closure, dam etc. iii. Site flood control during construction stage, iv. Preliminary plans for adhering to Environmental Requirements, v. Preliminary Quality Criteria to be applied, vi. Preliminary Health and Safety Plans, vii. Preliminary Security Plan, viii. Demonstration of management ability to execute the Contract, ix. Proposed contract structure x. Provision of a list of proposed subcontractors, with detail of their addresses, nationality and the proposed volume of work to be sub-contracted to each, xi. Details of key personnel for the administration and execution of the Project	25
Equipment Procurement Scheme i. Guaranteed characteristics, (Preference shall be given to those Tenderers who shall provide a plant giving comparatively better efficiencies of the turbine, generator and transformer.) ii. Guaranteed characteristics of metal structure and gate with lifting device, iii. Procurement, delivery and transportation plan, iv. Training and O&M service plan, v. Documentation. vi. A statement of the origin of each major item of plant they propose to supply for the Project, together with the name and address of each major supplier, vii. Inclusion of a description of the major electrical/mechanical equipment items and systems.	25

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5.1.7 Marking Criteria for Financial Proposal

Financial proposals were only evaluated of tenders securing more than 80% on the technical proposal. The marking criteria specified in the bidding documents and thereof adopted for evaluation of the financial proposals is set out below:

It is pertinent to mention that in order to ensure an apple-to-apple comparison, price adjustments were made to the tenders submitted by each of the tenderers. These price adjustments were to cater for:

1) Adjustment for omissions/inadequacy in scope of work;

2) Adjustment for technical non compliance i.e. the cost of making good any deficiency resulting from technical non-compliance was added to the corrected total price for comparison purposes only;

   The price adjustment for variation in plant efficiency was made as follows:
   Guaranteed Efficiency:

   The average weighted efficiencies of turbines and generator for tender evaluation purposes were set at 90% and 98.2% respectively. Guaranteed efficiency of main transformer was to be maintained at not less than 99.7%. The quoted price was decreased or increased by US$ 500,000 (United States Dollars Five Hundred Thousand Only) for each 0.1% or part thereof that the weighted average efficiency was greater or less than the required guaranteed weighted average efficiency for the plant.

3) Adjustment for commercial non-compliance i.e. the cost of making good any deficiency resulting from any quantifiable acceptable variations and deviations from the Tender Schedules and Conditions of Contract were added to the corrected total price for comparison purpose only;
4) Adjustment for completion schedule: Prices quoted by bidders specifying a completion period of more than sixty (60) months were increased by a factor of 0.05% (of the quoted price) for each additional calendar day required for completion.

5.1.8 Marking of Overall Bid

The weightage allocated to the Technical and Financial proposal is set out below:

a. Technical Proposal: 70%
b. Financial Proposal: 30%
c. Total: 100%

5.2 Response from Tenderers

The invitation for Bidding was published in newspapers and on website of the Project Company on October 01, 2014. Any company interested in EPC of the Project can get a copy of the bidding document, upon deposit of US$ 1,000 or an equivalent amount in Pak Rupees. Following five parties purchased the Bidding documents:

1. Descon Integrated Projects Pvt. Limited, Pakistan
2. China Machinery Engineering Corporation, China
3. Power Construction Corporation of China (PowerChina)
4. China Gezhouba Company Limited
5. Yangtze Three Gorges Technology and Economy Development Co, Ltd., China

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5.2.1 Site Visit and Pre-Tender Meeting

A site visit was organized by the Project Company for the potential tenderers on 27th October 2014 so as to give potential tenderers the chance to view the project site and become familiar with the condition. During the site visit, potential tenderers examined the site in detail including areas for power house, dam, diversion and intake structure, colony and dumping area etc. Potential tenderers also examined the bore holes and rock cores during the site visit, as provided in the feasibility study completed at LOI stage and the additional geological data revealed through subsequent site investigations, which form part of the bidding documents. Government of Punjab and AJK were intimated about these visits through letters issued to respective Deputy Commissioner Officers. The district authorities arranged police escorts for foreign visitors.

Subsequently, a Pre-Tender Meeting, pursuant to Section 3.3.9 of Vol. 1 (Instructions to Tenderers) of the bidding documents was conducted on 29th October 2014. The purpose of the meeting was to inform potential tenderers about the project and provide them with the opportunity to seek clarification on bidding documents and any clarification that arose from the site visits, to promote a clearer understanding of the Project Company's requirement and expectation. During the meeting potential tenderers were briefed on key features of the project and bidding document. A presentation was also given to potential bidders, highlighting project background, key objectives and potential challenges of the project. Queries raised by the potential tenderers were clarified by KPCL and SMEC, afterwards, the Minutes of Meeting was circulated to all tenderers. The Meeting was attended by representatives of four prospective tenderers and also intimated to PPIB.

5.2.2 Preparation and Submission of Tenders

According to the requirements stipulated in the Bidding document, tenderers were required to prepare and submit their tender (including Technical Proposal and Financial Proposal) within a period of two and a half month. During such period, various tenderers sought clarifications to the Bidding documents. The Project Company issued clarifications and addendum, upon receipt of aforesaid requests, to all potential tenderers.

Tenderers were required to deliver their tenders along with tender security in US $ 5 Million to the KPCL Beijing office by 1600 hours local time (Beijing Time) on 15th December 2014, which also notified in the Bidding document. Following three parties submitted by due date and time:

1. Consortium of Yangtze Three Gorges Technology & Economy Development Co., Ltd and China Machinery Engineering Corporation- (TGDC-CMEC) ;
2. China Gezhouba Group Company Limited (CGGC);
3. Consortium of Power China – Dongfeng Electric Corporation (PC-DEC).

5.3 Tender Evaluation

5.3.1 Stage 1 Evaluation

In accordance with the evaluation criteria and procedures stipulated in the bidding document, the Envelope 1 of each tenderer was opened in bid opening meeting on the day immediately following due date of submission, and its contents were examined for evaluation of responsiveness of tenders (Stage 1 evaluation) based on following:

(i) Completeness of tenders: An assessment of the completeness of tenders in responding to the Instructions to Bidders.

(ii) Qualification of the tenderers: Eligibility of tenderers was established in terms of their capacity to design, build and commission the facility and to finance the works

Submissions of the three tenderers under Envelope 1 were examined by the Project Company and SMEC. The results of the evaluation are summarized:

Sr.	Criteria	Min. Threshold	Description	TGDC-CMEC-GMEC	PC-DEC	Gezhouba
I	Completeness	SOQ	SOQ1 – Power of Attorney	✓	✓	✓
			SOQ2 – Letter of Tender	✓	✓	✓
			S0Q3 – Tender Security	✓	✓	✓
			SOQ4 – SOQ Forms [2]	✓	✓	✓
II	Experience	General	Contracts as contractor or management contractor	✓	✓	✓
		Particular	Construction Experience	✓	✓	✓
III	Competence	Design capacity	Design experience	✓	✓	✓
		Equipment Manufacturers	Experience of equipment Manufacturer	✓	✓	✓
IV	Financial Capacity	Financial soundness	Average annual turnover	✓	✓	✓
			Liquidity	✓	✓	✓

5.3.2 Stage 2 Evaluation

The second stage involves the evaluation of the Technical Proposal and Financial Proposal (Envelope 2). At this stage first the Technical Proposal of each tender were evaluated. In response to bidding documents, three different technical schemes have been proposed in the respective tender, the summarization of which is as follows:

(i) A layout with a rock fill asphalt core dam and spillway, diversion and surface power house located in the right river bend has been proposed by the TGDC-CMEC,

(ii) A layout with a rock fill asphalt dam and spillway, diversion and underground power house at a depth of some 50m below the ground surface has been proposed by the CGGC,

(iii) A layout with a concrete gravity dam same as that in the feasibility study, diversion tunnels, surge chamber in the headrace tunnels and an surface power house near the Karot bridge has been proposed by the PC-DEC.

After technical evaluation of tenderers, technical scheme proposed by TGDC-CMEC consortium found to be the most robust from the technical perspective and got maximum technical scores i.e. 87. PC-DEC got 84 marks, whereas CGGC got 80 marks. Bidding documents specifies a minimum of 80 marks for technical qualification. All three tenderers technically qualified and proceed for financial evaluation.

Financial evaluation revealed EPC price quoted by each bidder. TGDC-CMEC Consortium quoted a price of US $ 1,277.8 Million, whereas CGGC quoted an EPC Price of US $ 1,349.9 Million and PC-DEC quoted an EPC Price of US $ 1405.1 Million. After taking into consideration any price adjustments for apple to apple comparison in accordance with the bidding document, EPC Price offered by TGDC-CMEC Consortium found to be lowest and got maximum financial scores i.e. 100. EPC Price offered by EPC price offered by CGGC got 94.46 marks and PC-DEC Consortium got 90.33 marks.

The EPC prices quoted in the tenders received range between US$ 1,277,814,333 and US$ 1,405,147,215 (in 2015 values), which are much lower than the comparable estimate of EPC costs in the feasibility study is US$ 1,642,789,000 (escalated at 3% to 2015 values).

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Both technical and financial scores were then accumulated to evaluate the first preferred tenderer, summary of which is shown in the table below:

Evaluation Item	Weight	TGDC-CMEC	PC-DEC	CGCG
EPC Price		1,277.8	1405.1	1,349.9
Scoring:				
Technical Scores	70%	87	84	80
Financial Scores	30%	100.00	90.33	94.46
Total	100%	90.90	85.90	84.34
Ranking		1	2	3

Based on results of the tender evaluation shown above, TGDC-CMEC was ranked 1st and hence was recommended by SMEC to negotiate the EPC Contract(s) for implementation of the project. For this purpose several around of negotiations were conducted for clarification on understanding of contractor's obligations, understanding of scope of work, design, construction timelines, changes in costs and other technical parameters.

5.4 EPC Contractual Arrangement

Based on tender evaluation and subsequent negotiations, KPCL has entered into the EPC Contract(s) with the preferred tenderer, which comprised of two (2) separate contracts in accordance with practice in Pakistan, namely:

a) The Engineering and Construction Contract (the "Onshore Contract"); and
b) The Equipment Supply Contract (the "Offshore Contract")

Distribution of responsibilities between the contracts is briefly described below:

The Onshore Contract is signed with TGDC, which includes design, engineering, construction, erection, testing, commissioning and all other works for completion of the Project inside Pakistan.

The Offshore Contract is signed with CMEC, which includes but not limited to supplying imported equipment and materials for the Project outside Pakistan. All equipment supplied under the Offshore Contract will be warranted by the Offshore Contractor.

EPC contract provides a lump-sum price, as provided in the below table:

Description	Local Currency (PKR Million)	Foreign Currency (US $ Million)	Total (US $ Million)
Equipment Supply Contract	-	203.0	203.0
Construction Contract	47,954.7	602.8	1,074.8
Total Contract Price	47,954.7	805.8	1,277.8

5.5 The EPC Contractor - TGDC-CMEC Consortium

5.5.1 TGDC - CMEC consortium

- Yangtze Three Gorges Technology & Economy Development Co., Ltd.(TGDC)

Yangtze Three Gorges Technology & Economy Development Co. Ltd. holds extensive experience in setting up Hydropower projects worldwide. The company provides engineering technology consulting, project management, and engineering contracting services. It also holds good and high reputation in project management and supervision in water conservancy and hydropower engineering, M&E equipment installation, and rich of site supervision experiences in large-sized turbine generator Fabrication and installation, RCC dam construction, concrete gravity clam and mass underground cavern. A list of some of key hydropower projects undertaken by the Project Company is provided below:

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Sr.	TGDC experience of Hydropower Projects	Country	Capacity (MW)
1	Murum hydropower project	Malaysia	944
2	Uppermadi hydropower project	Nepal	25
3	Da Dai River Hydropower Project	Burma	246
4	Three Gorges Hydropower Project	China	22,400
5	Jinsha River Xiangjiaba Hydropower Project	China	6,400
6	Jinsha River Xiluodu Hydropower Project	China	12,600
7	Jinsha River Baihetan Hydropower Project	China	16,000
8	Jinsha River Wudongde Hydropower Project	China	10,200
9	Jinsha River Jinanqiao Hydropower Project	China	2,400
10	Yunan Lancang River Lidi Hydropower Project	China	420

- **China Machinery Engineering Corporation**

Founded in 1978, CMEC is the first large engineering & trade company in China, and a member of China National Machinery Industry Corporation. It is a conglomerate taking engineering contracting as its core business and integrating trade, R&D, and international service.

CMEC has extended its business in the fields of international engineering contracting and International trade in general. CMEC holds experience in constructing mega hydropower projects worldwide, some of them are specified below.

Sr.	CMEC Experience of Hydropower Projects	Country	Capacity (MW)
1	Neelum-Jhelum Hydropower Project	Pakistan	969
2	Murum Hydropower Project	Malaysia	944
3	Imboulou Hydropower Project	Caongo	120

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Section 6. Project Cost

The Project Cost is based on the firm EPC Contract – comprising of the Offshore Contract and the Onshore Contract. The reference exchange rate used to convert the PKR denominated costs into United States Dollars is US $ 1 = PKR 101.6.

A summary of the Project Cost at EPC Stage is given below:

Project Cost Items	US $ Million
EPC Cost:	
• Offshore Contract	203.0
• Onshore Contract	1,074.8
Sub Total - EPC Cost	**1,277.8**
Other Project Costs:	
Engineering and Supervision cost	127.8
Land & Resettlement and Environment	12.5
Project Development Cost	127.8
Legal fee & charges	12.8
O&M Mobilization Cost	12.8
Duties and Taxes	23.6
Insurance during Construction	35.4
Financial Fee and Charges	55.6
Sinosure Fee	54.3
Interest during Construction	243.7
Sub Total – Other Project Costs	**706.2**
Total EPC Stage Project Cost	**1,984.0**

6.1 EPC Cost

As elaborated in Section 5.4, the scope of work to be carried out by the EPC contractor has been split into two parts, namely, onshore works and offshore works; where offshore works primarily relate to procurement and supply of electrical and mechanical equipment outside Pakistan, onshore works comprise civil works, erection, commissioning, testing, etc.

Total EPC cost for the project is US $ 1,277.8 Million. EPC cost at this stage is higher than Feasibility stage EPC cost, mainly because of a) Increase in price level of inputs of civil works and other EPC items. Feasibility Stage EPC costs were estimated based on price level of 2009, and price escalation during the 6 years period (i.e. 2009 – 2015) resulted in increased EPC cost. b) Increase in construction period from 4 years to 5 years. c) EPC stage costs were prepared on the basis of better site information, subsequent geotechnical investigations and studies, highlighting geological problems that were not identified at feasibility stage. d) Deteriorating law and order situation in Pakistan, and rising political and security risks in Pakistan, due to which most of EPC contracting firms have to increase their expenditure in security protection when undertaking projects in Pakistan and e) possibility of under estimation of costs by consultant at feasibility stage.

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Despite the foregoing circumstances, the EPC prices quoted in the tenders received ranged between US$ 1,277,814,333 and US$ 1,405,147,215 (in 2015 values). The comparable estimate of EPC costs in the feasibility study is US$ 1,642,789,000 (escalated at 3% to 2015 values). Thus, the lowest tender price is approximately 80% of the escalated feasibility estimate.

As identified above, KPCL adopted an effective and efficient International Competitive Bidding (ICB) process for procuring the services of EPC Contractor at the most competitive prices. Bidding process allows each tenderer to submit its own project layout and design, based on the project topography, geology, hydrology, and other basic information combined with site visits, so as to provide the most optimized and effective technical scheme for construction and implementation of the project. The tenderers submitted different technical schemes, and the most robust and cost effective solution was selected through the bidding process. KPCL believes that the prices as contracted with the EPC Contractors are reasonable under the prevailing market conditions.

6.1.1 Technical Details

a) Civil Works (Onshore Contract)

Civil works for the project includes construction of access roads and bridges, installation of camps and construction facilities, construction of dams and powerhouse, excavations of spillways and tunnels, construction works relating to reservoir area, Diversion and Intake structure etc. A brief description of main civil works is given below:

i) Asphalt Concrete Core Rock-fill Dam

An asphalt concrete rock fill dam shall be laid at bend head of river bend. The crest elevation of rock-fill dam with asphalt concrete core is 469.5m, the lowest elevation of foundation surface for the concrete pedestal of core wall base is 374.0m, and the maximum height of dam is 95.5m. The width of dam crest is 12.0m, the length of dam crest is 460.0m. The dam slope of upstream is 1V:2.25H, downstream slope above elevation 409.5m is 1V:2.25H, and below the elevation 409.5m is 1V:2.0H.

ii) Spillways

The spillway will comprise of water intake channel, control section, chute, flip bucket and downstream energy dissipation areas. The spillway will cross diagonally the ridge layout of the plot in river bend, the outlet is located in the lowest reach, and the flood releasing surface orifice and flood releasing & sediment flushing outlet will be laid out at the control section; the power station water intake will be laid out in the left side of diversion channel of spillway near the control section, and the power house will be laid out at the upstream of Karot bridge.

iii) Power Generation System

The power generation system is comprised of headrace tunnels and surface powerhouse. The headrace tunnels and powerhouse will be laid out in the plot of river bend at the right bank of Jhelum River. The headrace tunnels will be laid out between spillways and the powerhouse, intake of which will be located on the left side of the spillway canal. The headrace tunnel adopts the type of one unit for one tunnel, whose diameter is 9.6m~7.9m. The main powerhouse is located at a place about that is130m upstream of Karot Bridge. Dimensions of the powerhouse are 164.90m × 27m × 60.5m (length × width × height). The elevation of foundation is 358.50m, with the turbine centre line at level 382.50m.

iv) Diversion Structures

The river diversion structures during construction shall be made up by two cofferdams and three circular tunnels of 12.5 m diameter located on the right bank. The crest elevation of upstream earth-rock cofferdam was up to 435.0m; whereas the crest elevation of downstream earth-rock cofferdam was up to 407.5m. The flow capacity of the tunnels is 6,740 m^3/s equivalents to 10 year flood return period.

b) Electrical and Mechanical Equipment (Offshore Contract)

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The hydro-mechanical equipment to be procured pursuant to the offshore contract by the project includes, turbines, generators, cranes, auxiliary equipment and spare parts, diversion tunnel stop logs, spillways gates, spillways stop logs, power intake gates, power intake stop logs, intake trash racks, outlet gates flushing, outlet stop logs etc. A brief description of electrical and mechanical equipment is given below:

i) Turbines

Four Francis turbines will be installed for generation of electricity. The rated output of the turbines is 183 MW. The design head is 65m. Maximum net head of turbine is 76.26m, whereas Minimum net head is 50m.

ii) Generators

Four Generators with a rated capacity of 200MVA will be used for the project Generator rated voltage is 15.75kV, whereas rated speed is 100 rpm. Frequency of the generator is 50 Hz.

iii) Other Electrical Equipment

Electrical equipment include among others step-up transformers and ancillary equipment, MV and LV switch gear comprising of diesel generators standby sets, generator isolated phase bus duct and DC / AC Auxiliary systems, substation and interconnection facilities, control and instrumentation, SCADA and Telecommunication, earthing system, power house air conditioning & ventilation system, fire fighting system, tools, spare parts etc.

6.1.2 Adjustment for Cost Reopeners

In order to allow indexations to the onshore contractor, as agreed under the Onshore Contract (in line with the Hydropower Tariff Mechanism), the onshore contract has been split into cost of tunnels and costs other than tunnels. Indexations applicable on the same are provided in subsequent sections. The table below provides a general break-up of costs representing total EPC cost expected to be incurred by the Project.

EPC Cost		US $ Million
Onshore Contract	Tunnels	130.9
	All costs other than tunnels	943.9
	Total Onshore Contract	1,074.8
Offshore Contract	Electrical and Mechanical Equipment	203.0
Total EPC Cost		**1,277.8**

Further breakdown of onshore contract price in terms of currency of payment is provided below:

Description	Payable in Local Currency (PKR)	Payable in Local Currency (US $)	Total (US $)
Civil Works other than Tunnels	33,921,406,150	323,365,067	657,237,176
Tunnels	6,647,333,670	65,426,513	130,853,025
E & M Works	2,354,380,633	44,730,784	67,903,821
Testing and Commissioning	627,113,366	19,411,959	25,584,335
Detailed Engineering	327,895,198	29,045,834	32,273,149
Other EPC Costs (Including Coordination, Inland Transportation & Services, etc.)	4,076,581,237	75,804,479	115,928,310
Provisional Sums (Including Dayworks etc.)	-	45,000,000	45,000,000
EC Cost without Custom Duty	47,954,710,254	602,784,635	1,074,779,816

In line with the Hydropower Mechanism, the EPC cost and reference tariff as determined pursuant to this petition shall be subject to adjustment for following cost reopeners:

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a) Cost Escalation

Section 13.8 "Adjustment for Changes in Cost" of the Onshore Contract provide for changes in costs, stating: "The changes in costs shall only be adjusted in local currency portion on the basis of "rise and fall" of the prices of cement, fuel, reinforcement steel and labour obtained and utilized by the Contractor in Pakistan with respect to established costs for such resources on the Base Date of the Contract in accordance with the price adjustment formula in Annex H [Changes in Costs]"

As provided in Annex H, out of the total cost of Onshore Contract, 60% have been agreed with the contractor to be fixed i.e. no indexations or escalations are permitted against the same. The remaining 40% will be indexed – details regarding indexations applicable on the remaining portion are set out below:

Type	Weightings	
	Permissible Range (%)	Adjustment (%) as per TGDC-CMEC
a) Fixed Portion	60	60
b) Adjustable Portion	40	40
Labour (L)	7 to 15	14
Fuel (F)	4 to 11	7
Cement (C)	3 to 12	11
Reinforcing Steel (S)	7 to 13	8

The formula with the adjustment weightings as quoted by TGDC-CMEC and incorporated into the EPC contract as under:

Where:

"P_n" is the adjustment factor to be applied to the estimated value of the work carried out in month "n"

"a" is a fixed coefficient representing the non-adjustable portion of the Onshore Contract price;

"b", "c", "d", and "e" are coefficients representing the estimated proportion of each cost element – labour, fuel, cement, and reinforcing steel, respectively, in the works;

"L_o", "F_o", "C_o", and "S_o" are the base cost indices or reference prices corresponding to the above cost elements;

"L_n", "F_n", "C_n", and "S_n" are the cost indices or prices corresponding to the above cost elements in month "n";

The reference indices of the specified input cost items as agreed and incorporated in the EPC contract are as under:

Cost Element	Reference Index	Remarks
Labour (L)	200.14	Applicable index of "Construction Wage Rates" of 7.4 Consumer Price Index Number by Major Groups and Selected Commodities of the published Monthly Bulletin of Statistics of August 2014 by Pakistan Bureau of Statistics (PBS)
Fuel (F)	260.69	Applicable index of "Diesel Oil" of 7.9 Index Numbers of Wholesale Prices by Commodities of published Monthly Bulletin of Statistics of August 2014 by PBS

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Cost Element	Reference Index	Remarks
Cement (C)	207.76	Applicable index of "Cement" of 7.9 Index Numbers of Wholesale Prices by Commodities of published Monthly Bulletin of Statistics of August 2014 by PBS
Reinforcing Steel (S)	146.08	Applicable index of "Steel Bars & Sheets" of 7.9 Index Numbers of Wholesale Prices by Commodities of published Monthly Bulletin of Statistics of August 2014 by PBS

During EPC contract negotiation, the Project Company and the EC Contractor mutually agreed that (1)since PICC has been closed, "Sources of Indices" in the Onshore Contract (EC Contract) shall be changed to Pakistan Bureau of Statistics (PBS); (2) as the indices for November 2014 have not yet been published by PBS at the time of signature of Onshore Contract (EC Contract), the indices of August will be used for the time being and the appropriate indices will be later updated to the tender base date when the information is available.

Project Company hereby request the Authority for adjustment of EPC Cost and Reference Tariff at COD on account of Onshore Contract (EC Contract) cost escalation in accordance with above stated formula.

b) Adjustment for cost variation due to Change in Rock Classification

Annex H: "Changes in Costs" of the onshore Contract states that "The prices of tunnels will be adjusted according to the change in rock classification assumed at the stage of signing of the Contract and actually encountered at execution stage. However, the total quantities shall not be varied and remained fixed as on signing of the Contract".

The total cost for tunnels, estimated at the time of execution of the Onshore Contract is US $ 130.9 Million; said cost is based on the assumption that the rock classification encountered at each tunnel will be as follows:

(i) Hydraulic Tunnel 1 – Diversion Tunnel- Classification of Ground Conditions

Class	Q-value	Length Assumed (m)	Unit Rate US $/ meter length	Cost of Construction US $
1	Q >10	-	-	-
2	10> Q >4	-	-	-
3	4> Q >1	382.3	32,707.72	12,504,161
4	1>Q>0.1	734.9	66,091.70	48,570,793
5	0.1> Q > 0.01	224.6	109,591.90	24,614,340
6	Q < 0.01	-	-	-
Total		1,341.80		85,689,293

(ii) Hydraulic Tunnel 2 – waterway tunnel (diameter 9.6m)- Classification of Ground Conditions

Class	Q-value	Length Assumed (m)	Unit Rate US $/ meter length	Cost of Construction US $
1	Q >10	-	-	-
2	10> Q >4	-	-	-
3	4> Q >1	1,107.42	19,969.27	22,114,374
4	1>Q>0.1	0	41,697.53	0
5	0.1> Q > 0.01	0	43,892.57	0
6	Q < 0.01	-	-	-
Total		1,107.42		22,114,374

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(iii) Hydraulic Tunnel 3 – waterway tunnel (diameter 7.9m)- Classification of Ground Conditions

Class	Q-value	Length Assumed (m)	Unit Rate US$/ meter Length	Cost of Construction US$
1	Q >10	-	-	-
2	10> Q >4	-	-	-
3	4> Q >1	22.8	16,266.36	370,873
4	1>Q>0.1	59.8	33,453.38	2,000,512
5	0.1> Q > 0.01	77.4	35,338.60	2,735,208
6	Q < 0.01	-	-	-
Total		160		5,106,593

(iv) Powerhouse Main Access Tunnel (traffic tunnel)- Classification of Ground Conditions

Class	Q-value	Length Assumed (m)	Unit Rate US$/ meter Length	Cost of Construction US$
1	Q >10	-	-	-
2	10> Q >4	-	-	-
3	4> Q >1	213.6	14,990.64	3,202,001
4	1>Q>0.1	110.8	25,796.66	2,858,270
5	0.1> Q > 0.01	9.6	27,240.94	261,513
6	Q < 0.01	-	-	-
Total		334		6,321,784

(v) Adit 1- Diversion tunnel Adit- Classification of Ground Condition

Class	Q-value	Length Assumed (m)	Unit Rate US$/ meter Length	Cost of Construction US$
1	Q >10	-	-	-
2	10> Q >4	-	-	-
3	4> Q >1	75	6,434.88	4,826,16
4	1>Q>0.1	165	11,379.90	1,877,683
5	0.1> Q > 0.01	60	20,510.45	1,230,627
6	Q < 0.01	-	-	-
Total		300		3,590,926

(vi) Adit 2- Waterway tunnel Adit- Classification of Ground Conditions

Class	Q-value	Length Assumed (m)	Unit Rate US$/ meter Length	Cost of Construction US$
1	Q >10	-	-	-
2	10> Q >4	-	-	-
3	4> Q >1	241.5	5,418.83	1,308,647
4	1>Q>0.1	34.5	10,268.78	354,273
5	0.1> Q > 0.01	69	20,972.36	1,447,093
6	Q < 0.01	-	-	-
Total		345		3,110,013

(vii) Other tunnel 1- massif drainage tunnel- Classification of Ground Conditions

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Class	Q-value	Length Assumed (m)	Unit Rate US$/ meter Length	Cost of Construction US$
1	Q >10	-	-	-
2	10> Q >4	-	-	-
3	4> Q >1	313.3	4,113.20	1,288,665
4	1>Q>0.1	96.6	7,423.98	717,156
5	0.1> Q > 0.01	33.3	8,149.25	271,370
6	Q < 0.01	-	-	-
Total		443.2		2,277,191

(viii) Other tunnel 2- Spillway drainage tunnel- Classification of Ground Conditions

Class	Q-value	Length Assumed (m)	Unit Rate US$/ meter Length	Cost of Construction US$
1	Q >10	-	-	-
2	10> Q >4	-	-	-
3	4> Q >1	70	24,363.79	1,705,465
4	1>Q>0.1	25	30,453.04	761,326
5	0.1> Q > 0.01	5	35,212.00	176,060
6	Q < 0.01	-	-	-
Total		100		2,642,851

The unit rates specified in the above tables will also be subject to adjustment in accordance with the formula for the cost escalations specified 6.1.2 (a) above. Project Company hereby request the Authority for adjustment of EPC cost and Reference Tariff at COD on account of Rock classification.

6.2 Engineering and Supervision Cost

The engineering and supervision costs expected to be incurred by the Project Company comprise costs of the Owners Engineer, Engineer and Reopener Verifier under Power Purchase Agreement (PPA), Project Company's other engineering consultants, and Project Company's own supervision cost during the construction of the project. Proper Engineering and effective Supervision is the essence for effective and timely execution of the project. This includes supervision of procurement, installation and commissioning of the hydro mechanical and electrical works, as well as civil works during the construction period of the project.

As permitted under the Feasibility Stage Tariff determination awarded to the Project, costs under this head are expected to be 10% of the EPC costs.

6.3 Land acquisition, Resettlements and Environment Cost

The cost associated with acquisition of land, procurement of land through private negotiation(if any), compensation for resettlement to the inhabitants of the area to be affected by the development of the Project, compensation for removal of trees and crops, cost of social welfare of the local community, income generation and community support program, recreational facilities and other allied costs, to be incurred by the Project Company including cost of consultants and legal fees pertaining to land acquisition and resettlement, have been estimated and accounted for under this head.

Due to the Project's right abutment lies in Punjab while the left abutment lies in AJK, the Project Company has to acquire lands both in Punjab and AJK. However, pricing for land differs considerable between Punjab and AJK. In addition to normal land acquisition process, the Project Company shall undertake amicable private negotiations for land acquisition and resettlement in a transparent manner under supervision/facilitation of local governments.

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Furthermore given the fact that IFC is an equity participant in the project, the Project is required to comply with WB's "Performance Standard 5: Land Acquisition and Involuntary Resettlement". Therefore, it should be estimated that the land acquisition cost incurred by the project could potentially vary significantly. The Authority is requested to reimburse cost for land and resettlement on the basis of actual.

Keeping in view the fact that IFC will inject equity as well as provide certain portion of loan to the Project; the Project Company has to abide by the World Bank Group's Performance Standards on Environmental and Social Sustainability (ESMS) during the implementation, construction and operation of the Project, which is a mandatory requirement of IFC. Therefore, the environment cost includes but is not limited to proper treatment of water supply, sewerage, site protection and rehabilitation programs, monitoring programs and fish hatchery; proper action of mitigating environment impacts from the project (such as loss of community infrastructure, cultural property etc); proper maintenance and improvement of environment status of the area during the construction phase of the project, all of which shall be carried out following the criteria of WB's Performance Standard and to the satisfaction of IFC.

In this petition stage, the cost estimate for land acquisition, resettlements and environment Cost is still maintained at the same level as that applied and permitted under the Feasibility Stage Tariff determination since the same is adjustable at the time of COD based on actual costs incurred by the Project related to land acquisition & procurement, resettlement and environment.

6.5 Project Development Cost

This head includes the cost incurred for development of Project and includes all costs, fees and expenses incurred or to be incurred for such purpose. These costs include costs of:

- Feasibility study costs including cost for Hydrological study, Sedimentation study, Topographical survey of land, Geological and geotechnical study, Neotectonic and seismic hazard study, Project layout study, Dam design study, Hydromechanical and electrical study; and Transportation study etc.
- Additional site investigations;
- Costs related to the performance guarantee to be furnished to PPIB;
- Costs related to the Power Purchaser letter of credit to be furnished to the Power Purchaser pursuant to the provisions of the PPA;
- Various regulatory fees to be paid to NEPRA;
- Costs incurred during Project Company formation;
- Project Company staff salaries, allowances and other benefits;
- Project Company head office – development and running expenses during construction period;
- Travelling costs of Project Company staff;
- Cost of PR and media management;
- Cost of security arrangement for the Project;
- Costs relating to various permits for the Project; and
- Project advisors, including cost of Local and Foreign Financial Advisors, Insurance Advisor, Audit and Tax Advisors, Security Advisors, Carbon Credit Advisors etc.

The cost for Project Development has been maintained on the same basis as that permitted under the Feasibility Stage Tariff determination i.e. 10% of the EPC cost.

6.6 Legal Fee and Charges

This head pertains to legal fees and charges associated with engagement of international and domestic law firms for advice on all legal aspects of the Project. Given long implementation period of the Hydro projects, the services of legal advisors will be required throughout the

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development and construction period to assist in connection with the negotiation and execution of:

- EPC Contracts;
- Implementation Agreement (IA) with both with GOP and AJK Entities;
- Power Purchase Agreement (PPA);
- The Water Use Agreements;
- Financing Agreements, Security Agreements, including but not limited to the Direct Agreements between all counter parties to all project agreements;
- Land Acquisition/Lease Agreement
- Project site Agreements and Other Services.

During the construction period, legal advisors will be required to assist in order to ensure that the Project complies with all contracts and agreements together with all regulatory and other consents and approvals and to ensure that all legal issues are identified and appropriately rectified in a timely manner.

The cost has been maintained at the same level as that permitted under the Feasibility Stage Tariff determination i.e. legal fees are estimated to be 1% of the EPC cost.

6.4 O & M Mobilization

Cost of O & M mobilization has been assumed at 1% of EPC cost. This did not form part of the Feasibility Stage Tariff petition, however, during discussions with potential O&M contractors, it was highlighted by them that in order for them to take over the O&M of the Project smoothly from the EPC contractor – ensuring a seamless transition from the construction period into the operation period – they i.e. the O&M contractor needs to be mobilized on site anywhere between 7 – 9 months prior to COD. The costs associated with mobilization and on-site availability of the O&M team even prior to commencement of operations has to be catered for under the Project Cost.

It is important to highlight that while such costs are insignificant in case of a Project of such magnitude however the works associated with them are highly significant – in case the O&M team is not up-to-speed and ready to take on the Project immediately upon achievement of COD the ramifications can be catastrophic.

6.5 Duties and Taxes

Taxes and Customs Duty have been calculated at US$ 23.6 Million by the Project Company in accordance with the Power Policy, 2002 as follows:

a) Custom Duty & Sales Tax @ 5.00% (Five Percent) has been assumed on import of machinery, equipment, goods, spares and materials for the Project, in accordance with the Policy. In case a higher rate of Custom Duty is levied the same shall be charged and adjusted as per actual at COD.

b) Advance Income Tax @ 6.00% (Six Percent) has been assumed at the time of import of machinery, equipment, goods, spares and materials for the Project.

c) Sindh Infrastructure Development Surcharge @ 0.95% (zero Point Nine Five) of the imports for the Project has been assumed. The chargeability of Sindh Infrastructure Development Surcharge (the SIDS) is based on (i) the weight of the imported equipment / items, (ii) the distance of the Site from the port and (iii) use of equipment in Sindh. Since the imported equipment is not to be used in Sindh SIDS has not been assumed in the Project Cost.

In case there is any change in any taxes or duties above, or additional taxes, fees, excise duty, leives etc are imposed, the same shall be treated as pass through item and the EPC/Project cost

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and the Reference Tariff will be adjusted accordingly. Furthermore no AJK taxes have been assumed in the tariff petition. In case Project is required to pay any such taxes, Authority is requested to allow them as pass through item.

6.6 Insurance During Construction

Insurance During Construction cost covers the insurance cost of the Project's assets during the construction period. These cost estimates i.e. 2.75% of the EPC cost plus custom duties have been developed based on the most recent tariff determinations issued by NEPRA for other hydropower projects. Authority is hereby requested to allow Insurance During Construction at 2.75% of EPC cost plus custom duties, as is allowed in case of other Hydropower projects.

The Project, in view of the practices set by other IPPs in Pakistan and in accordance with the requirements typically set out by the Lenders funding the Project, intends to procure the following insurances during the construction phase of the Project:

(a) Construction All Risk Insurances (CAR);
(b) CAR Delay in Start-up Insurance;
(c) Terrorism Insurance;
(d) Marine and Inland Transit Insurance;
(e) Marine - Delay-In Startup Insurances; and
(f) Comprehensive General Liability.

6.7 Sinosure Fee

Sinosure is China's official export credit insurance agency, offering export credit insurance and overseas investment insurance. To be specific, Sinosure is the unique insurance entity in China that can provide Overseas Investment Insurance to the overseas investing projects by Chinese firms/entities. The policy of Overseas Investment Insurance covers equity and debt portion of the project and is intended to provide the insured with risk guarantee when they suffer economic losses because of war, currency exchange ban, requisition, or breach of contract by the government or related counterparts in countries where the insured have made investments. It is designed to support and promote Chinese companies and financial organizations.

According to the requirement of the Chinese government, state-owned enterprises such as CTG, undertaking overseas investments are required to acquire oversea investment insurance from Sinosure; similarly loans arranged from Chinese Banks (such as in the case of this Project) will need to be covered under the Sinosure insurance. Being one of prioritized project of the CPEC the Project has been allowed a concessional Sinosure rate @ 0.6% per annum (net of taxes). Given that (1) payments made to Sinosure are currently subject to 20% withholding tax at source and (2) as per terms preliminary agreed with the Sinosure which require premium to be received after tax deduction must be the same as those that would have been received had there been no tax, the rate has been grossed up to 0.75% (06%/(1-20%)). Authority is requested to allow Sinosure both on equity and debt, as both are mandatory for Chinese investment in Pakistan. The fee charged shall apply during construction as well as operations period of the Project, in accordance with following formula.

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Method of Sinosure calculation:

Premium during construction period:

(a) For Cumulative Equity Portion (per annum)

Premium for No. *i* policy year = Insured Amount for No. *i* policy year × Insurance Rate

Where:

- Insured Amount = Equity injected
- *i* = the number of policy year;

(b) For Debt Portion (per annum)

Premium for No. *i* policy year = Insured Amount for No. *i* policy year × Insurance Rate + committed amount for No. *i* policy year × Commitment Rate

Where:

- Insured Amount = (Principal already Disbursed + Interests Incurred) + (Principal to be Disbursed during No. *i* policy year + Interests to be Incurred during No.*i* policy year);
- *i* = the number of policy year;
- Committed Amount = Total Principal- (Principal already Disbursed + Principal to be Disbursed during No. *i* policy year)
- Commitment rate = Insurance Rate × 15%

Premium during operation period:

(a) For Equity Portion (per annum)

Premium for No. i policy year = Insured Amount for No. *i* policy year × Insurance Rate

Where:

- Insured Amount = Equity injected
- *i* = the number of policy year;

(b) For Debt Portion (per annum)

Premium for No. i policy year= Insured Amount for No. *i* policy year × Insurance Rate

Where:

- *i* = the number of policy year ;
- Insured Amount= Outstanding Principal at the beginning of No. *i* policy year + Interests incurred during No. *i* policy year.

6.8 Financial Fees and Charges

Financial Fee & Charges include costs related to Debt Financing of the project. Such costs include fees and charges related to lenders up-front fee, lenders advisors & agents charges, commitment fee, management fee, charges related to various letters of credit to be established in favor of various contracting parties, fees payable and stamp duty applicable on the financing documents, agency fee, security trustee fee, L/C commitment fee/charges for EPC, commitment fee and other financing fees cost and charges.

The financial charges requested as part of the Project Cost i.e. 3.5% of the debt arranged, are based on discussions held with the financial institutions and their experience regarding costs incurred on projects of such stature.

Keeping in view the deteriorating country risk profile of the country, long gestation period of the project and prevailing circular debt issue, higher financing cost is required to be incurred for obtaining financing for the project. Authority is hereby requested to allow financing fee and charge at the rate of 3.5% of debt amount.

6.9 Interest During Construction

The Interest during Construction ("IDC") has been calculated at US $ 243.7 Million on the terms offered by international financial institutions and banks to the Project at 6-month LIBOR plus a spread of 4.75% (Net of Taxes), as allowed at Feasibility Stage. Given that (1) interest payments made to Chinese Financial Institutions will be subject to 10% withholding tax at source and (2) as per terms agreed with the Lenders which require payments to be made such that amounts received after tax deduction are the same as those that would have been received had their been no tax, the spread has been grossed as follows:

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LIBOR = 0.36%
Spread = 4.75%
Tax = 10%

Grossed up Interest Rate = (0.36%+4.75%) / (1-10%) = 5.68%

It is pertinent to mention that the *Agreement For Avoidance Of Double Taxation And The Prevention Of Fiscal Evasion With Respect To Taxes On Income* signed between governments of China and Pakistan provides certain exemptions pursuant to which the withholding tax specified above might not be applicable on interest payments made to Chinese Financial Institutions. However, the status of the same i.e. as to whether this extends to commercial banks based in China or is limited to export credit agencies is not clear. It is therefore requested that the cost of withholding tax at prevailing rate be allowed if the same is found to be applicable.

Actual IDC, however, shall be subject to change depending on the fluctuations in base rate (6-month LIBOR), funding requirement (draw-downs) of the Project during the construction period, changes in Project Cost including changes due to Re-Openers, Taxes and Duties, and variations in PKR / USD exchange rate. Construction period assumed for IDC calculation is 5 year, which is in line with the construction period agreed with the EPC Contractors. It is pertinent to mention that all three bidders proposed the same construction period i.e. 5 years from construction start date.

The spread of 4.75% is considered to be reasonable given:

(i) Pakistan's security situation, due to which international lenders shall require a premium for taking on the additional risk of investing in Pakistan,
(ii) Pakistan's credit ratings which have deteriorated significantly during the past year, and
(iii) rates offered by the Pakistan government on recent euro-bonds issued by the government.

It is imperative to highlight at this stage that IFC is a stakeholder in TGSAIL, the majority shareholder of KPCL, and will exert all efforts in arranging financing at a lower rate; however, under the current circumstances it is not envisaged that financing at a lower spread will be possible.

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Section 7. Financing Arrangement

7.1 Project Financing

The Project Cost is envisaged to be funded on the basis of a Debt: Equity ratio of 80:20, however, this shall be firmed up once the term sheet for arrangement of debt financing has been finalized prior to financial close. For the purpose of this Petition, a debt: equity ratio of 80:20 has been assumed, thereby resulting in the following debt and equity injections for the Project:

	MILLION US $
DEBT	1,587.2
EQUITY	396.8
TOTAL PROJECT COST	1,984.0

The key issue in arranging financing for private sector hydropower projects is bankability and affordability. Although the operating costs of hydropower projects are reasonable (when compared to other conventional fossil fuel fired power projects) and the project life almost thrice as long, as of conventional thermal power plants. There are multiple cost-related factors that make hydropower projects difficult to finance on a private basis, particularly when compared to thermal projects. The security issues and uncertainties outlined above also make conventional debt finance difficult to secure for such projects.

Given the dynamics of the Project (debt size, appetite of local market, etc.) the entire debt financing of the Project will be sourced through foreign financial institutions as opposed to the earlier debt mix of 80:20 foreign:local proposed under the Motion for Leave for Review. The debt portion of the Project's financing will need to be funded by multiple **foreign sources** including international development financial institutions and Chinese banks. In particular, obtaining debt finance from international institutions is difficult and is subject to the highest standards of due diligence. In short, obtaining debt finance for this Project from these sources will require extraordinary effort.

For the purpose of the tariff petition, it has been assumed that debt finance shall be sourced through LIBOR based financing sources. This assumption is based on the fact that recognition of the majority shareholder in the Chinese debt market and IFC's interest in the majority shareholder and their mandate to provide assistance in securing financing for all projects to be undertaken by TGSAIL in Pakistan.

Key terms and condition of financing are provided in the table below:

LIBOR (dated 2nd January 2015)	0.36%
Spread	4.75%
Total Rate (Net of Tax)	5.11%
Withholding Tax	10%

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Total rate (Including Tax)	(0.36%+4.75%) / (1-10%) = 5.68%
Repayment period	12 years
Repayment basis	Semiannual

Keeping in view the above factors, Authority is hereby requested to allow 6 month LIBOR plus a spread of 4.75% Net of Taxes (i.e. 0.36%+4.75% = 5.11%, by adopting the Libor index of December, 2014) for financing of the project. In case 10% withholding tax (based on prevailing tax rate) on mark-up is applicable then, Authority is requested to allow the grossed up mark-up rate (i.e. (0.36%+4.75%) / (1-10%) =.5.68%).

Currently sponsors are planning to inject 20% equity into the project. The financing structure of 80:20 debt: equity might change later on based on mutual arrangement between banks and sponsors. In that case financing structure shall be adjusted to meet the updated financing structure, subject to the condition that the equity for the purpose of tariff calculation shall not exceed 30% as required under GOP Guidelines for determination of tariff for IPP projects of November, 2005. However this will be firmed up near the time of financial close and intimated to Authority as soon as it is finalized. Similarly actual debt composition may be different and if so, the interest rate and repayment terms shall be affected. This too will be firmed up near the time of financial close and intimated to Authority as soon as it is finalized. Authority is therefore also requested to all adjustment if project cost and relevant tariff components accordingly.

7.1.1 Return on Equity (ROE), ROE During Construction and Equity Redemption

The Return on Equity ("ROE"), Return on Equity during Construction ("ROEDC") and Equity Redemption ("ER") have been estimated separately and the same are provided under Section 9. The ER component has been requested due to the Build-Own-Operate-Transfer (BOOT) structure of the Project.

In line with the Feasibility Stage Petition, and as recognized by the Authority vide Serial 61 of its Decision No. NEPRA/TRF-UTC/2013/15274 dated 21 November 2014, relevant text of which is reproduced below:

"*... the Authority realizes that the **IRR allowed to Hydro should be at least at par with IRR allowed to Thar coal** so that the returns allowed to various types of coal i.e. imported, local, & Thar are not more than what has been allowed to Hydro. Therefore, to encourage clean technology and to attract hydro investment in the region, the Authority therefore, assures that the return on investment in Hydroelectric shall enjoy at least similar returns as allowed by the Authority to Thar coal investors.*"

Project Company hereby requests:

- ROE of 20% (IRR based) return on invested equity net of withholding tax.
- Accrual of ROEDC commencing from 30 months prior to start of construction date up to COD at a rate of 20% and payment thereafter (i.e. after COD) over the remaining life of the Project ensuring an ROEDC of 20% (IRR based) net of withholding tax. Authority is hereby requested to allow ROEDC from 30 months prior to start of construction date till COD on the basis of actual equity injection; and
- Equity Redemption commencing after repayment of debt i.e. from year 13 onwards.

It is pertinent to highlight that the withholding tax component has not been identified as a separate line item in the tariff as the same is assumed to be paid on all equity components i.e. ROE and ROE-DC, at actual as a pass-through item under the tariff.

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7.2 Carbon Credits

Hydropower is a clean form of energy and will reduce CO_2 emission. KPCL intends to register for CDM emission reduction program. In case any income is generated from CDM, the same shall be shared in accordance GoPs prevailing policy.

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Section 8. Operations Cost

The operational cost of the Project comprises of the operations and maintenance cost, water use charge and the cost of the operational period insurances to be taken out by the Project Company. Break-up of the same is provided hereunder:

	USD IN MILLION (PER ANNUM)
VARIABLE O&M	
LOCAL	4.8
FOREIGN	2.1
FIXED O&M	
LOCAL	8.3
FOREIGN	19.4
SUB TOTAL O&M COST	34.6
WATER USE CHARGE	4.7
INSURANCE COST	17.3
TOTAL OPERATIONS COST	56.6

8.1 Variable O&M Costs

The Variable O&M cost has been calculated based on a net average annual energy of 3,174 GWh – worked out based on the hydrological data of River Jhelum. Variable O&M is 20% of total O&M cost of the project. This component caters for the cost of services rendered by the O&M operator that are dependent on the operation of the Project thereby determinable on a kWh basis. This component also includes cost associated with replacement of parts necessitated due to regular operation / normal wear and tear. The Variable O&M cost will be incurred in local as well as foreign currency – percentage of local: foreign components is specified below along with indexations applicable on the same:

Sub-component	Percentage	Indexation
Local	70%	• Pakistan CPI (General)
Foreign	30%	• US CPI (All Urban Consumers) • PKR / USD Indexation

8.2 Fixed O&M Costs

Fixed O&M is 80% of total O&M cost of the project. Local portion of fixed O&M costs represents all costs expected to be incurred by the project locally; these include costs associated with local staff, administrative expenses, corporate fees, audit fees, the O&M operator's fee chargeable in PKR, etc.

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As elaborated in detail in Section 4.2 above, the majority shareholders of the Project Company are based outside Pakistan. Due to this reason, the senior management and core team employed by the Project Company will comprise of a large number of expatriates. Additionally, the fixed fees payable to the O&M operator (comprising of routine maintenance related costs, including but not limited to, visits by their foreign experts, import of routine replacement components, etc.) will also comprise of a foreign portion which is charged under this head.

The Fixed O&M cost will be incurred in local as well as foreign currency – percentage of local: foreign components are specified below along with indexations applicable on the same:

Fixed O&M	Percentage	Indexation
Local	30%	• Pakistan CPI (General)
Foreign	70%	• US CPI (All Urban Consumers) • PKR / USD Indexation

8.3 Water Use Charge

This component represents the use of water charges payable to the provincial government. The same are determined as a function of the electricity generated (in per kWh) by the Plant. Water Use Charge is included in tariff at the rate of 0.15 PKR/kWh. Indexation of the Water Use Charge component is requested to be based on the indexation based on Pakistan CPI (General).

8.4 Insurance Cost

The insurance cost consists of operations all risk insurance for the project, as well as business-interruption insurance; these are standard insurances required by all lenders' and also set out under the PPA.

Aforementioned insurances are required to be maintained throughout the life of the Project. Since the Pakistan Insurance/Reinsurance industry does not have sufficient capacity and expertise to manage such huge risks entirely, therefore this risk is required to be insured/reinsured internationally. The risks' to be covered through insurance will include machinery breakdown, natural calamities (like earthquake, floods, etc.), sabotage and consequential business interruption, etc.

As permitted under the Feasibility Stage Tariff determination, KPCL has requested that an annual insurance cost at a rate of 1.35% of the EPC cost be allowed.

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Section 9. Reference Tariff

The proposed Reference Tariff is a typical two-part tariff comprising of:

- Energy Purchase Price ("EPP") for the energy generated and delivered to the power purchaser; and
- Capacity Purchase Price ("CPP") based on the installed capacity taking into account historical hydrological data of River Jhelum.

9.1 Energy Purchase Price

The Energy Purchase Price ("EPP") of tariff comprises of the Variable O&M component and Water Use Charge. The EPP is payable against each kWh of energy generated and delivered to the power purchaser as measured by the Metering System at the Interconnection point.

9.2 Capacity Purchase Price

The Capacity Purchase Price ("CPP"), specified in PKR / kW / Month, is based on the net plant capacity specified under the Petition – 712.8 MW. The monthly billable amount of CPP will be determined based on the tested capacity established during the annual capacity test. This is a fixed monthly payment payable to KPCL irrespective of the actual hydrology i.e. hydrological risk shall be borne by the power purchaser.

The CPP will comprise of Fixed O&M (local), Fixed O&M (foreign), Return on Equity, Return on Equity during Construction, Equity Redemption, Insurance During Operation, Sinosure fee and Debt Servicing – comprising of Principal and Interest

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9.3 Reference Generation Tariff

Year	PKR/kWh				PKR/kW/M									PKR/kWh
	Variable O&M		Water Use Charge	Energy Charge	Fixed O&M		Insurance	Return on Equity	ROEDC	Debt Servicing		Sinosure	Capacity Charge	Total
	Foreign	Local			Foreign	Local				Principal	Interest			
1	0.0664	0.1549	0.1500	0.3713	229.9693	98.5583	204.9020	942.6329	552.6822	1133.3906	1054.5494	184.6528	4401.3376	12.2325
2	0.0664	0.1549	0.1500	0.3713	229.9693	98.5583	204.9020	942.6329	552.6822	1198.6555	989.2845	175.6629	4392.3477	12.2083
3	0.0664	0.1549	0.1500	0.3713	229.9693	98.5583	204.9020	942.6329	552.6822	1267.6785	920.2615	166.1553	4382.8401	12.1826
4	0.0664	0.1549	0.1500	0.3713	229.9693	98.5583	204.9020	942.6329	552.6822	1340.6761	847.2639	156.1002	4372.7850	12.1555
5	0.0664	0.1549	0.1500	0.3713	229.9693	98.5583	204.9020	942.6329	552.6822	1417.8772	770.0628	145.4661	4362.1509	12.1269
6	0.0664	0.1549	0.1500	0.3713	229.9693	98.5583	204.9020	942.6329	552.6822	1499.5239	688.4162	134.2197	4350.9045	12.0966
7	0.0664	0.1549	0.1500	0.3713	229.9693	98.5583	204.9020	942.6329	552.6822	1585.8720	602.0680	122.3257	4339.0105	12.0645
8	0.0664	0.1549	0.1500	0.3713	229.9693	98.5583	204.9020	942.6329	552.6822	1677.1924	510.7476	109.7467	4326.4315	12.0306
9	0.0664	0.1549	0.1500	0.3713	229.9693	98.5583	204.9020	942.6329	552.6822	1773.7714	414.1687	96.4434	4313.1282	11.9948
10	0.0664	0.1549	0.1500	0.3713	229.9693	98.5583	204.9020	942.6329	552.6822	1875.9117	312.0284	82.3741	4299.0589	11.9569
11	0.0664	0.1549	0.1500	0.3713	229.9693	98.5583	204.9020	942.6329	552.6822	1983.9336	204.0064	67.4946	4284.1794	11.9168
12	0.0664	0.1549	0.1500	0.3713	229.9693	98.5583	204.9020	942.6329	552.6822	2098.1759	89.7642	51.7583	4268.4431	11.8743
13	0.0664	0.1549	0.1500	0.3713	229.9693	98.5583	204.9020	979.4210	552.6822	-	-	33.3849	2098.9178	6.0277
14	0.0664	0.1549	0.1500	0.3713	229.9693	98.5583	204.9020	979.4210	552.6822	-	-	31.4211	2096.9539	6.0224
15	0.0664	0.1549	0.1500	0.3713	229.9693	98.5583	204.9020	979.4210	552.6822	-	-	29.4573	2094.9901	6.0171
16	0.0664	0.1549	0.1500	0.3713	229.9693	98.5583	204.9020	979.4210	552.6822	-	-	27.4935	2093.0263	6.0118
17	0.0664	0.1549	0.1500	0.3713	229.9693	98.5583	204.9020	979.4210	552.6822	-	-	25.5296	2091.0625	6.0065
18	0.0664	0.1549	0.1500	0.3713	229.9693	98.5583	204.9020	979.4210	552.6822	-	-	23.5658	2089.0987	6.0012
19	0.0664	0.1549	0.1500	0.3713	229.9693	98.5583	204.9020	979.4210	552.6822	-	-	21.6020	2087.1348	5.9959
20	0.0664	0.1549	0.1500	0.3713	229.9693	98.5583	204.9020	979.4210	552.6822	-	-	19.6382	2085.1710	5.9907
21	0.0664	0.1549	0.1500	0.3713	229.9693	98.5583	204.9020	979.4210	552.6822	-	-	17.6744	2083.2072	5.9854
22	0.0664	0.1549	0.1500	0.3713	229.9693	98.5583	204.9020	979.4210	552.6822	-	-	15.7105	2081.2434	5.9801
23	0.0664	0.1549	0.1500	0.3713	229.9693	98.5583	204.9020	979.4210	552.6822	-	-	13.7467	2079.2796	5.9748
24	0.0664	0.1549	0.1500	0.3713	229.9693	98.5583	204.9020	979.4210	552.6822	-	-	11.7829	2077.3157	5.9695
25	0.0664	0.1549	0.1500	0.3713	229.9693	98.5583	204.9020	979.4210	552.6822	-	-	9.8191	2075.3519	5.9642
26	0.0664	0.1549	0.1500	0.3713	229.9693	98.5583	204.9020	979.4210	552.6822	-	-	7.8553	2073.3881	5.9589
27	0.0664	0.1549	0.1500	0.3713	229.9693	98.5583	204.9020	979.4210	552.6822	-	-	5.8915	2071.4243	5.9536
28	0.0664	0.1549	0.1500	0.3713	229.9693	98.5583	204.9020	979.4210	552.6822	-	-	3.9276	2069.4605	5.9483
29	0.0664	0.1549	0.1500	0.3713	229.9693	98.5583	204.9020	979.4210	552.6822	-	-	1.9638	2067.4967	5.9430
30	0.0664	0.1549	0.1500	0.3713	229.9693	98.5583	204.9020	979.4210	552.6822	-	-	0.0000	2065.5328	5.9377
														10.4119

Levelized Tariff (1-30 years) discounted at 10% per annum = US Cents 10.2479/kWh at a reference exchange rate of 1 US$ = 101.6 Rupees

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9.4 Reference Debt Servicing Schedule

Repayment Period	Principal Repayment (PKR)	Principal Repayment Component of Tariff (Rs./ kW / Month)	Interest on Outstanding Debt (Rs.)	Interest on Outstanding Debt Component of Tariff (Rs./ kW / Month)	Total Installment (Rs.)	Debt Servicing Component of Tariff (Rs. / kW / Month)
1	47,041,767	558.7640	45,058,448	535.2060	92,100,216	1,093.9700
2	48,377,231	574.6267	43,722,985	519.3433	92,100,216	1,093.9700
3	49,750,607	590.9397	42,349,609	503.0303	92,100,216	1,093.9700
4	51,162,971	607.7158	40,937,245	486.2542	92,100,216	1,093.9700
5	52,615,431	624.9682	39,484,785	469.0018	92,100,216	1,093.9700
6	54,109,125	642.7103	37,991,091	451.2597	92,100,216	1,093.9700
7	55,645,223	660.9562	36,454,993	433.0139	92,100,216	1,093.9700
8	57,224,929	679.7200	34,875,287	414.2500	92,100,216	1,093.9700
9	58,849,481	699.0165	33,250,735	394.9535	92,100,216	1,093.9700
10	60,520,162	718.8608	31,580,004	375.1092	92,100,216	1,093.9700
11	62,238,252	739.2684	29,861,964	354.7016	92,100,216	1,093.9700
12	64,005,427	760.2554	28,095,089	333.7146	92,100,216	1,093.9700
13	65,822,461	781.8382	26,278,054	312.1318	92,100,216	1,093.9700
14	67,690,939	804.0338	24,409,436	289.9363	92,100,216	1,093.9700
15	69,612,445	826.8594	22,487,770	267.1106	92,100,216	1,093.9700
16	71,588,665	850.3330	20,511,550	243.6370	92,100,216	1,093.9700
17	73,620,988	874.4730	18,479,228	219.4970	92,100,216	1,093.9700
18	75,711,006	899.2983	16,389,210	194.6717	92,100,216	1,093.9700
19	77,860,358	924.8284	14,239,858	169.1416	92,100,216	1,093.9700
20	80,070,727	951.0833	12,029,489	142.8868	92,100,216	1,093.9700
21	82,343,846	978.0835	9,756,370	115.8866	92,100,216	1,093.9700
22	84,681,496	1005.8502	7,418,720	88.1199	92,100,216	1,093.9700
23	87,085,509	1034.4051	5,014,706	59.5649	92,100,216	1,093.9700
24	89,557,770	1063.7707	2,542,446	30.1993	92,100,216	1,093.9700

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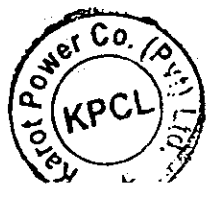
Tarot Power Co. (Pvt) Ltd.
KPCL

Section 10. Indexations & Adjustments

10.1 Indexations

It is submitted that indexations be made on 1st January, 1st April, 1st July and 1st October respectively, on the basis of latest information available with respect to Consumer Price Index (CPI) (General), as notified by Pakistan Bureau of Statistics, US CPI (for all Urban-consumer) as notified by US Bureau of Labor Statistics and exchange rate as notified by National Bank of Pakistan.

10.1.1 Foreign Variable O&M Cost Component

The Reference Foreign Variable O&M Cost Component of the Variable O&M Cost shall be quarterly indexed to both:

(a) the USD/PKR exchange rate, based on the revised TT & OD selling rate of USD as notified by the National Bank of Pakistan; and

(b) US CPI (for all Urban-consumer), as issued by the US Bureau of Labor Statistics.

The applicable formula shall be as follows:

$$VO\&M_{(FRev)} = \text{Relevant Reference Generation Tariff Component} * (US\ CPI_{(Rev)} / US\ CPI_{(Ref)}) * (FX\ USD_{(Rev)} / FX\ USD_{(Ref)})$$

Where:

$VO\&M_{(FRev)}$ = the revised Foreign Variable O&M Cost Component applicable for the relevant quarter

$US\ CPI_{(Rev)}$ = the revised US CPI (for all Urban-consumers) for the month prior to the month in which indexation is applicable, as issued by the US Bureau of Labor Statistics

$US\ CPI_{(Ref)}$ = the US CPI (for all Urban-consumers) for the month of January 2015 i.e. 234.677, as issued by the US Bureau of Labor Statistics.

$FX\ USD_{(Rev)}$ = the revised TT & OD selling rate of PKR/USD as on the date on which indexation is applicable, as notified by the National Bank of Pakistan.

$FX\ USD_{(Ref)}$ = TT & OD selling rate of PKR/USD, prevailing on 31st January 2015 i.e. 101 as notified by the National Bank of Pakistan

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10.1.2 Local Variable O&M Cost Component

The Reference Local Variable O&M Cost Component of the Variable O&M Cost shall be quarterly indexed to the CPI (General) in Pakistan, as notified by the Pakistan Bureau of Statistics based on the following formula:

$$VO\&M_{(LRev)} = \text{Relevant Reference Generation Tariff Component} * \frac{(CPI_{(Rev)} / CPI_{(Ref)})}{}$$

Where:

$VO\&M_{(LRev)}$	=	the revised Local Variable O&M Cost Component applicable for the relevant quarter
$CPI_{(Rev)}$	=	the revised CPI (General) in Pakistan for the month prior to the month in which indexation is applicable, as notified by the Federal Bureau of Statistics.
$CPI_{(Ref)}$	=	the CPI (General) in Pakistan for the month of January 2015 i.e. 196.95 as notified by the Federal Bureau of Statistics.

10.1.3 Local Fixed O&M Cost Component

The Reference Local Fixed O&M Cost Component shall be quarterly indexed to the CPI (General) in Pakistan, as notified by the Pakistan Bureau of Statistics based on the following formula:

$$LFO\&M_{(LRev)} = \text{Relevant Reference Generation Tariff Component} * \frac{(CPI_{(Rev)} / CPI_{(Ref)})}{}$$

Where:

$LFO\&M_{(LRev)}$	=	the revised Local Fixed O&M Cost Component applicable for the relevant quarter
$CPI_{(Rev)}$	=	the revised CPI (General) in Pakistan for the month prior to the month in which indexation is applicable, as notified by the Pakistan Bureau of Statistics.
$CPI_{(Ref)}$	=	the CPI (General) in Pakistan for the month of January 2015 i.e. 196.95, as notified by the Pakistan Bureau of Statistics.

10.1.4 Foreign Fixed O&M Cost Component

The Reference Foreign Fixed O&M Cost Component shall be quarterly indexed to both:

(a) the USD/PKR exchange rate, based on the revised TT & OD selling rate of USD notified by the National Bank of Pakistan; and

(b) the US CPI (for all Urban-consumers), issued by the US Bureau of Labor Statistics .

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The applicable formula shall be as follows:

$$FO\&M_{(FRev)} = \text{Relevant Reference Generation Tariff Component} * (US\ CPI_{(Rev)} / US\ CPI_{(Ref)}) * (FX\ USD_{(Rev)} / FX\ USD_{(Ref)})$$

Where:

$FFO\&M_{(FRev)}$	=	the revised Foreign Fixed O&M Cost Component, applicable for the relevant quarter
$US\ CPI_{(Rev)}$	=	the revised US CPI (for all Urban-consumers) for the month prior to the month in which indexation is applicable, issued by US Bureau of Labor Statistics.
$US\ CPI_{(Ref)}$	=	the US CPI (for all Urban-consumers) for the month of January 2015 i.e. 234.677, as issued by US Bureau of Labor Statistics.
$FX\ USD_{(Rev)}$	=	the revised TT & OD selling rate of PKR/USD as on the date on which indexation is applicable, as notified by the National Bank of Pakistan.
$FX\ USD_{(Ref)}$	=	TT & OD selling rate of PKR/USD, as notified by the National Bank of Pakistan on 31st January 2015 i.e. 101..

10.1.5 Insurance Cost

The Reference Insurance Cost Component shall be annually indexed to USD/PKR exchange rate, based on the revised TT & OD selling rate of USD notified by the National Bank of Pakistan.

(a) Indexation Formula

The indexation of the Insurance Cost Component shall be based on the following formula:

$$Insurance_{(Rev)} = \text{Relevant Reference Generation Tariff Component} * (FX\ USD_{(Rev)} / FX\ USD_{(Ref)})$$

Where:

$Insurance_{(Rev)}$	=	the revised Insurance Cost Component applicable for the relevant year
$FX\ USD_{(Rev)}$	=	the revised TT & OD selling rate of PKR/USD as on the date on which indexation is applicable, as notified by the National Bank of Pakistan.

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$FX\ USD_{(Ref)}$ = TT & OD selling rate of PKR/USD, prevailing on 31st January 2015 i.e. 101 as notified by the National Bank of Pakistan

10.1.6 Return on Equity, Return on Equity during Construction and Equity Redemption

In line with NEPRA's previous determinations, the ROE, ROEDC, and ER Component of the Reference Generation Tariff shall be quarterly indexed to the USD/PKR exchange rate, based on the revised TT & OD selling rate of USD notified by the National Bank of Pakistan.

The applicable formula shall be as follows:

$$ROE_{(Rev)} = \text{Relevant Reference Generation Tariff Component}^* \left(FX\ USD_{(Rev)} / FX\ USD_{(Ref)}\right)$$

$$ROE\text{-}DC_{(Rev)} = \text{Relevant Reference Generation Tariff Component}^* \left(FX\ USD_{(Rev)} / FX\ USD_{(Ref)}\right)$$

$$ER_{(Rev)} = \text{Relevant Reference Generation Tariff Component}^* \left(FX\ USD_{(Rev)} / FX\ USD_{(Ref)}\right)$$

Where:

$ROE_{(Rev)}$	=	the revised ROE component applicable for the relevant quarter
$ROE\text{-}DC_{(Rev)}$	=	the revised ROE-DC component applicable for the relevant quarter
$ER_{(Rev)}$	=	the revised ER component applicable for the relevant quarter
$FX\ USD_{(Rev)}$	=	the revised TT & OD selling rate of PKR/USD as on the date on which indexation is applicable, as notified by the National Bank of Pakistan.
$FX\ USD_{(Ref)}$	=	TT & OD selling rate of PKR/USD, prevailing on 31st January 2015 i.e. 101 as notified by the National Bank of Pakistan

10.1.7 Withholding Tax on Dividend

Withholding tax on dividend shall be treated as pass through item. Withholding tax shall be paid at the rate of 7.5% of the return on equity (including return on equity during construction). The power purchaser shall make payment on account of withholding tax at the time of actual payment of dividend subject to maximum of 7.5% of 20% return on equity according to the following formula:

$$\text{Withholding tax payable} = [\{20\% * (E_{(Ref)} - E_{(Red)})\} + ROEDC_{(Ref)}] \times 7.5\%$$

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Where:

E_{Ref} = Adjusted Reference Equity at COD

E_{Red} = Equity Redeemed

E_{Ref} = Adjusted Reference Return on Equity during Construction

In case the Project does not declare a dividend in any particular year or only declares a partial dividend, then the difference in the withholding tax amount (between what has been paid in that year and total entitlement as per net return on equity) would be carried forward and accumulated so that the Company is able to recover the same as pass through item from power purchaser in future on the basis of total dividend payout.

10.1.8 Water Use Charge

The Reference Water Use Charge Cost Component shall be annually indexed to the CPI (General) in Pakistan, as notified by the Pakistan Bureau of Statistics based on the following formula:

$$WUC_{(LRev)} = \text{Relevant Reference Generation Tariff Component} * (CPI_{(Rev)} / CPI_{(Ref)})$$

Where:

$WUC_{(Rev)}$ = the revised Water Use Charge Cost Component applicable for the relevant year

$CPI_{(Rev)}$ = the revised CPI (General) in Pakistan for the month prior to the month in which indexation is applicable, as notified by the Pakistan Bureau of Statistics.

$CPI_{(Ref)}$ = the CPI (General) in Pakistan for the month of January 2015 i.e. 196.95 as notified by the Pakistan Bureau of Statistics.

10.1.9 Interest Charges

The interest part of fixed charge component will remain unchanged throughout the term except for the adjustment due to exchange rate variation and variation in 6 months LIBOR, while spread of 4.5% on LIBOR remaining the same, according to the following formula:

$$\Delta I = P_{(Rev)} * (LIBOR_{(Rev)} - 0.36\%)/2$$

Where:

ΔI = the variation in interest charges applicable corresponding to variation in six-month LIBOR. ΔI can be positive or negative depending upon whether $LIBOR_{(Rev)} >$ or $< 0.36\%$. The interest payment obligation will be enhanced or reduced to the extent of ΔI for each period under adjustment applicable on bi-annual basis.

$P_{(Rev)}$ = the outstanding principal on a semi-annual basis at the relevant calculation dates.

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10.2 Adjustments

10.2.1 Adjustment due to Variation in Net Capacity

The Reference Generation Tariff for CPP has been determined on the basis of net capacity of 712.8 MW. It is requested that the CPP components be adjusted at the time of COD based upon the Initial Dependable Capacity (IDC) test to be carried out for determination of Contract Capacity (as defined under the PPA).

We would request NEPRA to adjust the CPP components based on the following formula:

$$CC_{(Adj)} = CC_{(Ref)} \times 712.8\ MW / NC_{(IDC)}$$

Where:

$CC_{(Adj)}$ = Adjusted relevant CCP component of tariff

$CC_{(Ref)}$ = Reference relevant CCP component of tariff

$NC_{(Adj)}$ = Net Capacity at reference site conditions established at the time of IDC test

10.2.2 Adjustments due to variation in Project Cost Components

The Project Company requests NEPRA to allow adjustment to the total Project Cost for the following items forming part of Project Cost:

(a) Adjustment for Civil Works Cost Escalation including costs associated with steel, cement, labour, and fuel;

(b) Adjustment for cost variation due to Change in Rock Classification, i.e. due to unforeseen rock categories encountered during excavation along with adjustments due to escalation in units rates due to escalation in input costs

(c) Adjustment for variation in Cost of Land Acquisition and Resettlement

(d) Return on Equity during Construction based on the actual drawdowns;

(e) US$ / PKR exchange rate variations during the construction period;

(f) Adjustment due to all local Duties and Taxes paid or withheld in relation to the Project;

(g) Adjustment for financial cost due to arrangement, commitment, and other fees charged by the Lenders of the Project;

(h) Adjustment for interest during Construction including change in interest base rate (LIBOR), variation in loan & equity drawdowns;

(i) Adjustment of costs associated with hydraulic steel structure and hydro-mechanical and electrical works (if not allowed/ adjusted at EPC stage); and

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(j) Adjustment due to costs associated with resettlement of habitants of the area affected by the construction of the Project.

(k) Adjustment of insurance cost incurred both during construction and operation period of the Project.

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Section 11. Pass throughs & Assumptions

11.1 Pass Throughs

Authority is requested to allow following cost components as pass-through to KPCL on the basis of actual costs reasonably incurred by Project Company or obligated to be paid in relation to the Project pursuant to Laws of Pakistan.

a) No provision of income tax has been provided for in the tariff. If the Project Company is obligated to pay any type of tax, the same should be allowed to the Project Company as pass through.

b) No withholding tax on dividend has been included in the tariff. Authority is requested to allow payment of withholding tax on dividend as pass through at the time of actual payment of dividend.

c) The payments to Workers Welfare Fund and Workers Profit Participation Fund have not been accounted for in the Project budget and have been assumed to be reimbursed as passthrough at actual by the power purchaser.

d) Zakat deduction on dividends as required under Zakat Ordinance is considered as a pass through;

e) No tax on income of KPCL (including proceeds against sale of electricity to CPPA/NTDC) has been assumed. Corporate tax, turn over tax, general sales tax / provincial sales tax and all other taxes, excise duty, levies, fees etc. by any federal / provincial entity including local bodies as and when imposed, shall be treated as a pass through item;

f) No AJK taxes have been assumed in the tariff petition. In case Project is required to pay any such taxes, same shall be treated as a pass through item;

g) No hedging cost is assumed for exchange rate fluctuations during construction and all cost overruns resulting from variations in the exchange rate during construction shall be allowed as pass through;

h) Any costs incurred by Project Company, which are required to be incurred by Power Purchaser pursuant to provisions of PAA shall also be treated as pass through.

i) Except above-mentioned items it this sub-clause 11.1, any other taxes and charges that constitute as part of the Project Cost no matter during construction period and operation period shall be treated as pass through.

11.2 Assumptions

The proposed Reference Tariff is based on the following assumptions. A change in any of these assumptions will necessitate a corresponding adjustment in the Reference Tariff:

Karot Power Co. (Pvt) Ltd. KPCL

a) Debt for the Project will be sourced solely through foreign financial institutions (Chinese banks, IFC, etc). Exact composition of debt i.e. local: foreign will be finalized prior to financial close; adjustment against the same will be requested at the time of COD;

b) An exchange rate of PKR 101.6 /USD has been assumed. Indexation against PKR / USD variations will be permitted for debt servicing payments and all other project costs denominated in foreign currency. Tariff components shall be respectively indexed for exchange rate variations as discussed in Section 10

c) The timing of drawdown of debt and equity may vary from those specified in this Petition; as such, the Project Cost will be adjusted on the basis of actual IDC at COD. Similarly, ROEDC component will also be updated in the Reference Tariff;

d) Similarly, adjustments in Project Cost due to variation in PKR / USD variations and KIBOR (if applicable) / LIBOR fluctuations will also be catered for at the time of COD;

e) Taxes and Custom duties amounting to US$ 23.6 Million have been assumed on the import of plant and equipment under 2002 Generation Policy will be adjusted as per actual payment at COD;

f) Withholding tax at 6% on supplies (the prevailed rate in November, 2014, which is the base date stipulated in Bidding document pursuant to the Onshore Contract have been catered for under the Project Cost. No withholding tax is anticipated on the Offshore Contract. In case there is any change in taxes etc., or additional taxes, fees, excise duty, levies, etc. are imposed, the EPC cost and ultimately the Project cost and the Reference Tariff will need to be adjusted accordingly;

g) General sales tax and provincial sales tax are assumed not to be applicable on the Onshore Contract and the Offshore Contracts. In case these are levied and are not allowed to be carried forward by the tax authorities, the same will be included in the Project Cost;

h) The power purchaser will compensate for energy delivered to the power purchaser prior to COD. For this purpose Energy Purchase Price shall be paid for all energy delivered prior to COD. Payments will be invoiced to the power purchaser as per mechanism specified in the PPA;

i) The power purchaser shall be solely responsible for the financing, engineering, procurement, construction, testing and commissioning of the interconnection and transmission facilities. Said facilities will be made available to the Project at least on or before the deadline set in the Power Purchase Agreement. Furthermore, the power purchaser will be solely responsible for operation and maintenance of the interconnection and transmission facilities;

j) Hydrological risk will be borne by the Power Purchaser;

k) The power purchase agreement will be structured as a take-or-pay contract whereby the Capacity Purchase Price will be payable to the Project Company regardless of actual dispatch levels;

l) Water Use Charge and its indexation will be in accordance with Power Policy, 2002 and the Water Use Agreement signed between the Project Company and the provincial government;

m) Project contingency and maintenance reserves are not included in Reference Tariff calculations. If required by lenders, these will be adjusted accordingly in the Reference Tariff;

n) In case of any unintentional error or omissions, typographic errors, and any genuine assumption being overlooked, the same will be corrected/incorporated and advised to

Karot Power Co. (Pvt) Ltd. KPCL

NEPRA as soon as the Project Company becomes aware of it;

o) Any additional indexation or concession allowed by the GOP, NEPRA or any other Govt. entity to any IPP will be allowed to KPCL without any discrimination.

Karot Power Compnay (Private) Limited

Dated: 2nd April 2015

Karot Power Co. (Pvt) Ltd. KPCL

巴基斯坦卡洛特电力有限公司

KAROT POWER COMPANY (Pvt.) LIMITED

REF NO. TGSAILKPCL2015083

February 25, 2015

Managing Director
Private Power and Infrastructure Board (PPIB)
50-Nazimuddin Road
F-7/4, Islamabad

RECEIVE
P.P.I.B
Date: 25/02/15

Subject: 720 MW Karot Hydropower Project – Submission of EPC Stage Tariff Petition

Dear Sir,

Please refer to the Letter of Support No. 1(101) PPIB-2021-03/13/PRJ dated 29 August 2013 (LOS) issued to this Company for the subject Project and your letter No.1(101) PPIB-2021-03/15/PRJ dated 24 February 2015 wherein we are requested to file the EPC Stage Tariff Petition with NEPRA by 28th February 2015.

Kindly note that the development of the Project has so far been progressing in accordance with the schedule stipulated in the LOS. The Company has successfully conducted the international competitive bidding process for selection of the EPC Contractors for the Project, and based on the firmed EPC cost the draft EPC Stage Tariff Petition has been finalized with the assistance from our consultants, namely Bridge Factor as the financial advisor, AQLAAL as the legal counsel and SMEC as the technical consultant.

It shall be highlighted that the discussions on indicative Tem Sheets or related supporting documents with potential lenders and Sinosure are going on in parallel with the preparation of the Tariff Petition in order to negotiate for a better financial terms. However, due to the long traditional Chinese Spring Festival, such Term Sheets are still awaited. It is envisaged that the process for consideration and issuance of the indicative Term Sheet from the lenders and Sinosure will be initiated once the Festival ends and their management comes back to office. In order to satisfy the formality, we consider that six weeks time would be sufficient for being granted such supporting documents of great significance and then we will be in a proper position to file the Tariff Petition.

House No.05,Street No.72,F-8/3,Islamabad,Pakistan Tel: + 92-51-8439612 Fax:+92-51-2287188

We are, however, confident that such delay in filing the petition shall not affect the Financial Closing Date as per the LOS. Actually, we are already in the process of and achieving good progress in the negotiation of the concession agreements with relevant authorities in Pakistan and discussion of the financial documents with potential lenders in China.

In line with the above, we hereby request that extension in filling EPC Stage Tariff Petition shall be extended by six (06) weeks i.e. till April 11th 2015. Furthermore, with this extension request, we are not requesting any extension in the Financial Closing Date; hence overall timeline of the Project Implementation shall not be affected.

Except the change(s) requested above, all other terms and conditions of the LOS shall remain valid and enforceable.

Your support in this regard is highly appreciated.

With Best Regards,

Yours Sincerely,

Mr. Sheng Zhendong
Chief Executive Officer
Karot Power Company (Pvt.) Limited

CC:
Director Hydro, PPIB